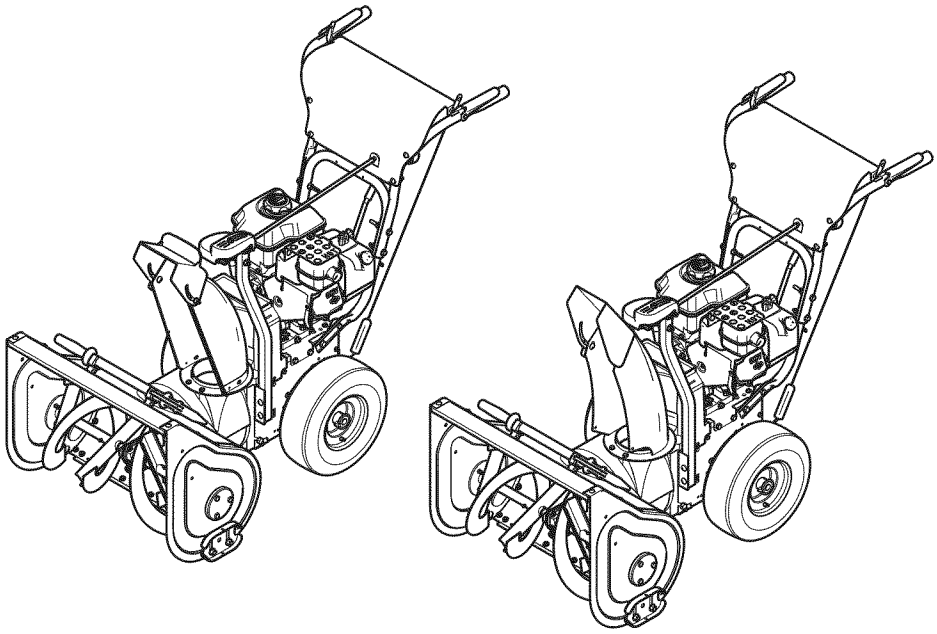
Simplicity® SNAPPER™

OPERATOR'S MANUAL



Intermediate Frame Snowthrowers

Intermediate Frame Snowthrowers

Mfg. No.	Description
1695302	SMI I924E B&S 24
1695311	SMI I924EX B&S 24 (CE)
1695410	SMI I924RX MS B&S 24 (CE)
1695313	SNP I924E B&S 24
1695314	SNP I1924EX B&S 24 (CE)
1695411	SNP I924RX MS B&S 24 (CE)

CAUTION: Read and follow all instructions.

Manual Part No. 1734501
Revision 01
Rev. Date 08/2007
TP 100-4609-01-IW-SN

SAVE THESE INSTRUCTIONS

READ THE MANUAL

The operator's manual contains important safety information you need to be aware of BEFORE you operate your unit as well as DURING operation.

Safe operating techniques, an explanation of the product's features and controls, and maintenance information is included to help you get the most out of your equipment investment.
Failure to obey the safety rules could result in loss of control of the unit, severe personal injury or death to you, or bystanders, or damage to property or equipment.

Safety Icons

The alert symbol ⚠ is used to identify safety information about hazards that can result in personal injury. A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of the injury. In addition, a hazard icon may be used to represent the type of hazard. An explanation of hazard levels and icons are as follows:

⚠ DANGER

This indicates a hazard which, if not avoided, **will result in serious injury or death.**

⚠ WARNING

This indicates a hazard which, if not avoided, **could result in serious injury or death.**

⚠ CAUTION

This indicates a hazard which, if not avoided, **might result in minor or moderate injury.**

⚠ WARNING

You must read, understand and comply with all safety and operating instructions in this manual before attempting to set-up and operate your snowthrower.

Failure to comply with all safety and operating instructions can result in loss of machine control, serious personal injury to you and /or bystanders, and risk of equipment and property damage. The triangle in the text signifies important cautions or warnings which must be followed.

⚠ WARNING

Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.

SAFETY DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

All DANGER, WARNING, CAUTION and instructional messages on your product should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important.

If any decals are lost or damaged, replace them at once. See your local dealer for replacements.

These labels are easily applied and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation.

Read and obey all operation and warning decals.

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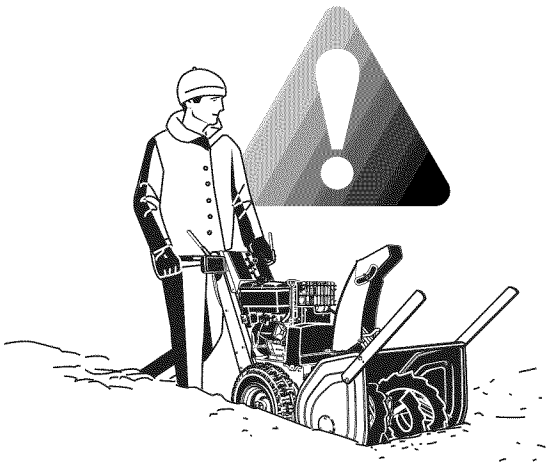
Safety Rules & Information



Operating Safety

Congratulations on purchasing a superior-quality piece of lawn and garden equipment. Our products are designed and manufactured to meet or exceed all industry standards for safety.

Power equipment is only as safe as the operator. If it is misused, or not properly maintained, it can be dangerous! Remember, you are responsible for your safety and that of those around you.

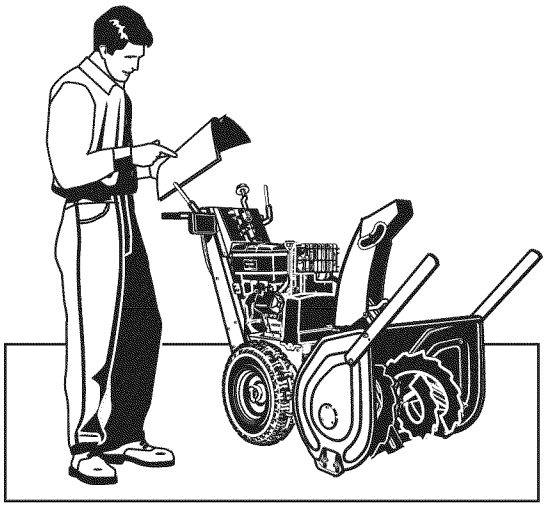
Use common sense, and think through what you are doing. If you are not sure that the task you are about to perform can be safely done with the equipment you have chosen, ask a professional: contact your local authorized dealer.

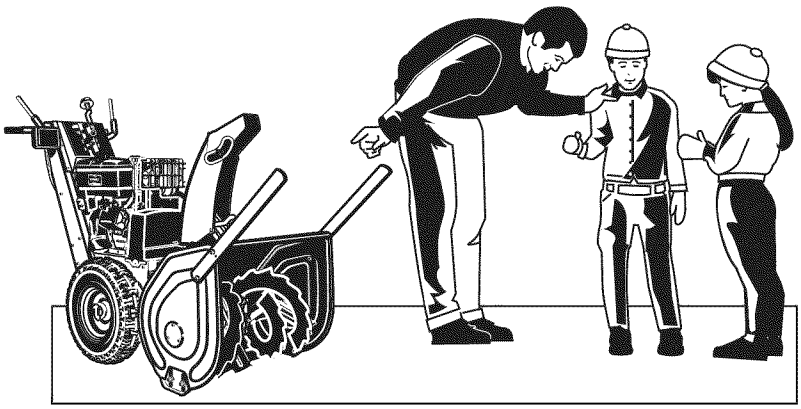
Read the Manual

The operator's manual contains important safety information you need to be aware of BEFORE you operate your unit as well as DURING operation.

Safe operating techniques, an explanation of the product's features and controls, and maintenance information is included to help you get the most out of your equipment investment.

Be sure to completely read the Safety Rules and Information found on the following pages. Also completely read the Operation section.





Children

Tragic accidents can occur with children. Do not allow them anywhere near the area of operation. Children are often attracted to the unit and snowthrowing activity. Never assume that children will remain where you last saw them. If there is a risk that children may enter the area where you are operating the unit, have another responsible adult watch them.

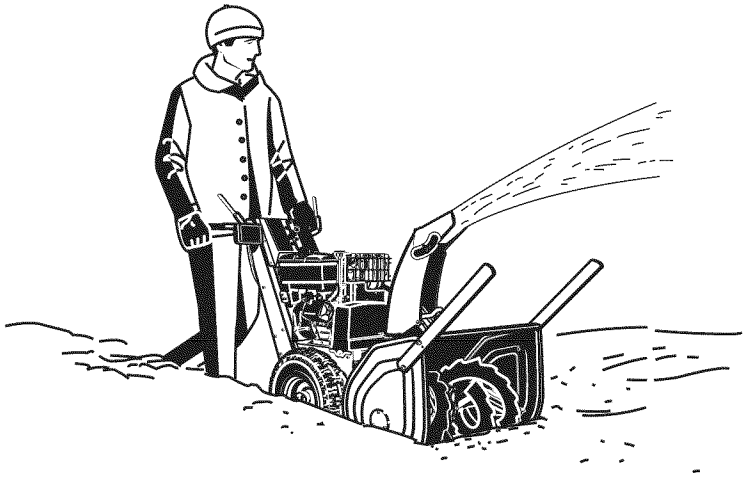
DO NOT ALLOW CHILDREN TO OPERATE THIS UNIT! This encourages them to come near the unit in the future while it is running, and they could be seriously hurt. They may then approach the unit when you are not expecting it, and you may run over them.

Moving Parts

This equipment has many moving parts that can injure you or someone else. However, if you are standing in the operator's position, and follow all the rules in this book, the unit is safe to operate.

The auger and impeller have spinning parts that can amputate hands and feet. Do not allow anyone near the equipment while it is running! DO NOT clear the discharge chute by hand. If the chute becomes plugged, stop the engine, wait for all moving parts to stop, and clear the blockage with a clean-out tool or piece of wood.

To help you, the operator, use this equipment safely, it is equipped with an operator-present safety system. Do NOT attempt to alter or bypass the system. See your dealer immediately if the system does not pass all the safety interlock system tests found in this manual.



Thrown Objects

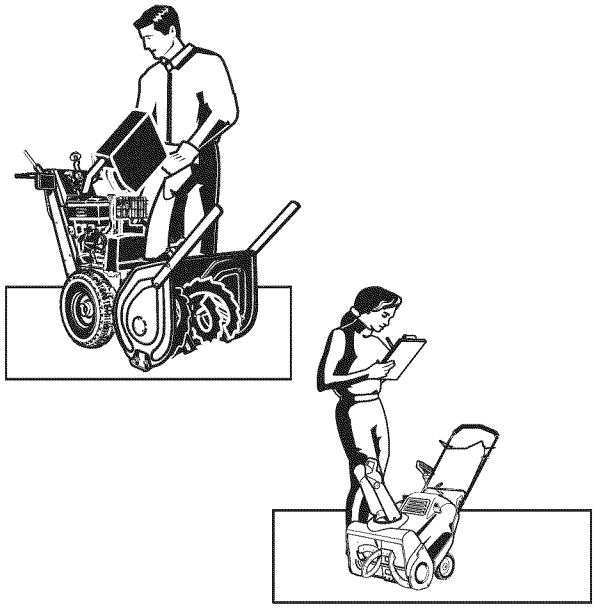
This unit has a spinning auger and impeller. They pick up and throw snow and ice. Thrown debris could seriously injure a bystander. ALWAYS direct the discharge chute away from bystanders and property that could be damaged by frying debris. Be sure to clean up the area to be cleared BEFORE you start.

Do not allow anyone in the area while the unit is running! If someone does enter the area, shut the unit off immediately until they leave.

Fuel and Maintenance

Gasoline is extremely flammable. Its vapors are also extremely flammable and can travel to distant ignition sources. Gasoline must only be used as a fuel, not as a solvent or cleaner. It should never be stored any place where its vapors can build up or travel to an ignition source like a pilot light. Fuel belongs in an approved, plastic, sealed gas can, or in the snowthrower fuel tank with the cap securely closed. Spilled fuel needs to be cleaned up immediately.

Proper maintenance is critical to the safety and performance of your unit. Be sure to perform the maintenance procedures listed in this manual, especially periodically testing the safety system.



Safety Rules & Information

This machine is capable to amputating hands and feet and throwing objects. Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of unit, severe personal injury or death to you, or bystanders, or damage to property or equipment. ⚠ The triangle in text signifies important cautions or warnings which must be followed.

TRAINING

1. Read, understand, and follow all instructions on the machine and in the manuals before operating this unit. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
3. Keep the area of operation clear of all persons, particularly small children and pets.
4. Exercise caution to avoid slipping or falling especially when operating in reverse.

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used and remove all doormat, sleds, boards, wires, and other foreign objects.
2. Disengage all clutches and shift into neutral before starting engine (motor).
3. Do not operate the equipment without wearing adequate winter outer garments. Wear footwear that will improve footing on slippery surfaces. Avoid loose fitting clothing that can get caught in moving parts.
4. Handle fuel with care; it is highly flammable.
   (a) Use an approved fuel container.
   (b) Never add fuel to a running engine or hot engine.
   (c) Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel.
   (d) Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground, away from your vehicle, before filling.
   (e) When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
   (f) Keep nozzle in contact with the rim of the fuel tank or container opening at all times, until refueling is complete. Do not use a nozzle lock-open device.
   (g) Replace gasoline cap securely and wipe up spilled fuel.
   (h) If fuel is spilled on clothing, change clothing immediately.
5. Use extension cords and receptacles as specified by the manufacturer for all units with electric drive motors or electric starting motors.
6. Adjust the collector housing height to clear gravel or crushed rock surfaces.
7. Never attempt to make any adjustments while the engine (motor) is running (except when specifically recommended by the manufacturer).
8. Let engine (motor) and machine adjust to outdoor temperatures before starting to clear snow.
9. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect eye from foreign objects that may be thrown from the machine.

OPERATION

1. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
2. Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
3. After striking a foreign object, stop the engine (motor), remove the wire from the spark plug, disconnect the cord on electric motors, thoroughly inspect the snowthrower for any damage, and repair the damage before restarting and operating the snowthrower.
4. If the unit should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.
5. Stop the engine (motor) whenever you leave the operating position, before unclogging the collector/impeller housing or discharge guide, and when making any repairs, adjustments, or inspections.
6. When cleaning, repairing, or inspecting make certain the collector/impeller and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.
7. Do not run the engine indoors except for starting the engine or for transporting the snowthrower in or out of the building. Open the outside doors; exhaust fumes are dangerous.
8. Exercise extreme caution when operating on slopes. Do not attempt to clear steep slopes.
9. Never operate the snowthrower without proper guards plates, or other safety protective devices in place and working.
10. Never direct the discharge toward people or areas where property damage can occur. Keep children and others away.
11. Do not overload the machine capacity by attempting to clear snow at too fast a rate.
12. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when operating in reverse.
13. Disengage power to the collector/impeller when snowthrower is transported or not in use.
14. Use only attachments and accessories approved by the manufacturer of the snowthrower (such as wheel weights, counterweights, or cabs).
15. Never operate the snowthrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk, never run.
16. Never touch a hot engine or muffler.
17. Never operate the snowthrower near glass enclosures, automobiles, window wells, drop-offs, and the like without proper adjustment of the

discharge angle.
18. Never direct discharge at bystanders or allow anyone in front of the unit.
19. Never leave a running unit unattended. Always disengage the auger and traction controls, stop engine, and remove keys.
20. Do not operate the unit while under the influence of alcohol or drugs.
21. Keep in mind the operator is responsible for accidents occurring to other people or property.
22. Data indicates that operators, age 60 years and above, are involved in a large percentage of power equipment-related injuries. These operators should evaluate their ability to operate the unit safely enough to protect themselves and others from injury.
23. DO NOT wear long scarves or loose clothing that could become entangled in moving parts.
24. Snow can hide obstacles. Make sure to remove all obstacles from the area to be cleared.

CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the unit and the operating activity. Never assume that children will remain where you last saw them.

1. Keep children out of the area and under the watchful care of another responsible adult.
2. Be alert and turn unit off if children enter the area.
3. Never allow children to operate the unit.
4. Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

CLEARING A CLOGGED DISCHARGE CHUTE

Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers. Never use your hand to clean out the discharge chute.

To clear the chute:

1. SHUT OFF THE ENGINE.
2. Wait 10 seconds to be sure the impeller blades have stopped rotating.
3. Always use a clean out tool, not your hands.

SERVICE, MAINTENANCE, AND STORAGE

1. Check shear bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
2. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water and spacer heaters, or clothes dryers. Allow the engine to cool before storing in any enclosure.
3. Always refer to the operator's manual for important details if the snowthrower is to be stored for an extended period.
4. Maintain or replace safety and instruction labels as necessary.
5. Run the machine a few minutes after throwing snow to prevent freeze-up of the collector/impeller.
6. If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
7. Always observe safe refueling and fuel handling practices when refueling the unit after transportation or storage.

8.Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.

9. Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.
10. Maintain or replace safety and instruction labels as necessary.
11. Keep nuts and bolts tight and keep equipment in good condition.
12. Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
13. Components are subject to wear, damage, and deterioration. Frequently check components and replace with manufacturer's recommended parts, when necessary.
14. Check control operation frequently. Adjust and service as required.
15. Use only factory authorized replacement parts when making repairs.
16. Always comply with factory specifications on all settings and adjustments.
17. Only authorized service locations should be utilized for major service and repair requirements.
18. Never attempt to make major repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding of manufacturer's warranty.
19. Check shear bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.

EMISSIONS

1. Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or other reproductive harm.
2. If available, look for the relevant Emissions Durability Period and Air Index information on the engine emissions label.

IGNITION SYSTEM

1. This spark ignition system complies with Canadian ICES-002.

Decals

DECALS

This unit has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment.

Although reading this manual and safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

All WARNING, CAUTION, and instructional messages on your unit should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important.

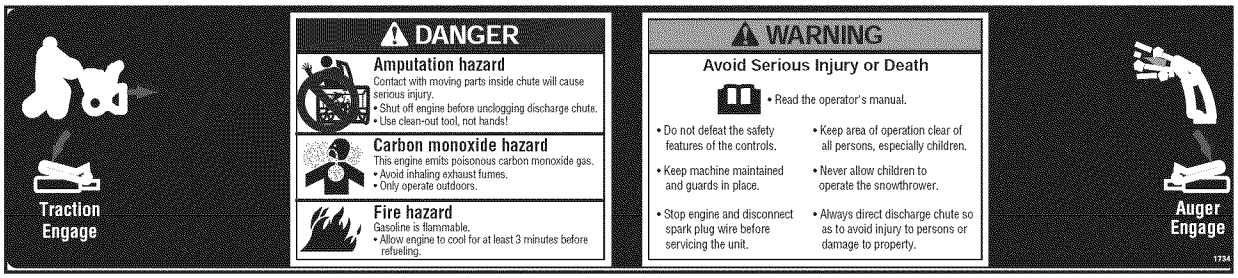
The safety decals below are on your unit.

If any of these decals are lost or damaged, replace them at once. See your local dealer for replacements.

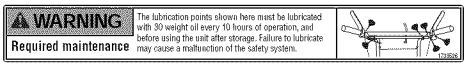
These labels are easily applied and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective, operation.

NOTE: Engine operation and safety decals are supplied by the engine manufacturer.

NORTH AMERICAN MODEL DECALS


Traction Engage
DANGER
Amputation hazard
Contact with moving parts inside chute will cause serious injury.
• Shut off engine before unclogging discharge chute.
• Use clean-out tool, not hands!
Carbon monoxide hazard
This engine emits poisonous carbon monoxide gas.
• Avoid inhaling exhaust fumes.
• Only operate outdoors.
Fire hazard
Gasoline is flammable.
• Allow engine to cool for at least 3 minutes before refueling.
WARNING
Avoid Serious Injury or Death
• Read the operator's manual.
• Do not defeat the safety features of the controls.
• Keep area of operation clear of all persons, especially children.
• Keep machine maintained and guards in place.
• Never allow children to operate the snowthrower.
• Stop engine and disconnect spark plug wire before servicing the unit.
• Always direct discharge chute so as to avoid injury to persons or damage to property.
Auger Engage
1734

Part No. 1734499 - DASH SMI/SNAPPER
Main Dash Decal, North American


WARNING
Required maintenance
The lubrication points shown here must be lubricated with 30 weight oil every 10 hours of operation, and before using the unit after storage. Failure to lubricate may cause a malfunction of the safety system.

Part No. 1733526
Lubrication Decal

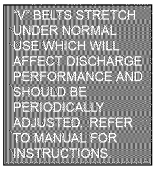
DANGER
Amputation hazard
Contact with the auger will cause serious injury.
• Keep hands, feet, and clothing away.
• Shut off engine before servicing.

Part No. 1716532
Auger Danger
Decal

DANGER
Amputation hazard
Contact with moving parts inside chute will cause serious injury.
Shut off engine before unclogging discharge chute.
Use clean-out tool, not hands!
1733057

Part No. 1733057
Discharge Chute
Danger Decal

Part No. 728183
Important
Over Adjustment

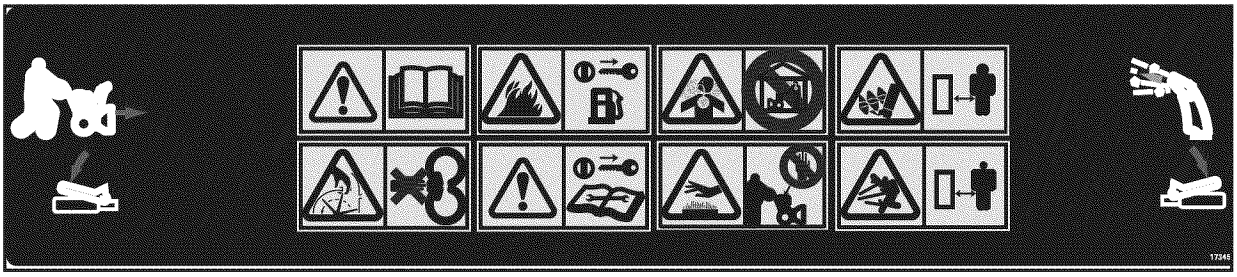

'V' BELTS STRETCH UNDER NORMAL USE WHICH WILL AFFECT DISCHARGE PERFORMANCE AND SHOULD BE PERIODICALLY ADJUSTED. REFER TO MANUAL FOR INSTRUCTIONS.

Part No. 725432
Belt Stretch &
Adjust

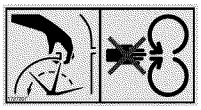
ALL MODEL DECALS

Part No. 724172 - SMI/SNAPPER
Speed Control Decal, All Models

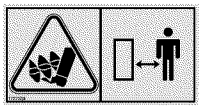
CE MODEL DECALS



Part No. 1734591 - SMI/SNAPPER
Main Dash Decal, Export - CE



Part No. 1727207
Discharge Chute
Danger Decal



Part No. 1727208
Auger Danger Decal

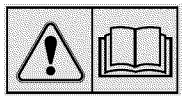
Part No. 728183
Important
Over Adjustment

Safety Icons

SAFETY ICONS

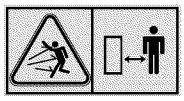
WARNING: READ OPERATOR'S MANUAL.

Read and understand the Operator's Manual before using this machine.



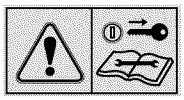
DANGER: THROWN OBJECTS.

This machine is capable of throwing objects and debris. Keep bystanders away.



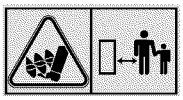
WARNING: REMOVE KEY BEFORE SERVICING.

Remove the key, disconnect spark plug wire, and consult technical literature before performing repairs or maintenance.



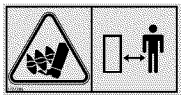
WARNING: DISMEMBERMENT.

This machine can amputate limbs. Keep bystanders and children away when engine is running.



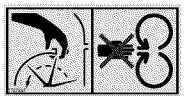
DANGER: DISMEMBERMENT.

The auger can amputate limbs. Keep hands and feet away from auger and rotating parts.

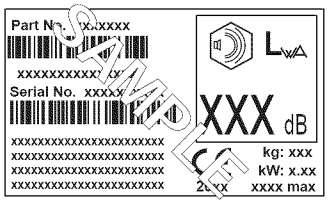


DANGER: DISMEMBERMENT.

The impeller can amputate limbs. Stop the engine, remove the key, and disconnect spark plug wire before clearing the discharge chute or performing service work. Keep hands and feet away from impeller and rotating parts.



North American / CE Models



CE Models (Only)

Identification Numbers

When contacting your authorized dealer for replacement parts, service, or information you MUST have these numbers.

Record your model name/number, manufacturer's identification numbers, and engine serial numbers in the space provided for easy access. These numbers can be found in the locations shown.

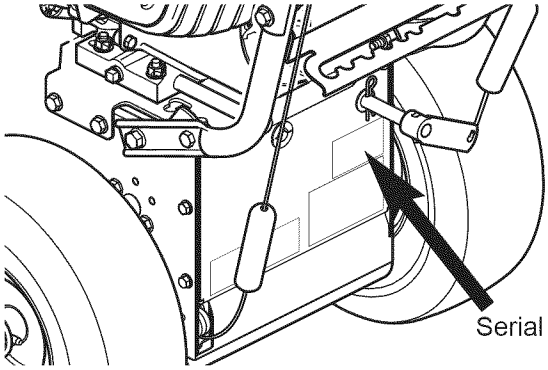
NOTE: For location of engine identification numbers, refer to the engine owner's manual.

CE Models: Place the extra copy of the identification tag in the manual

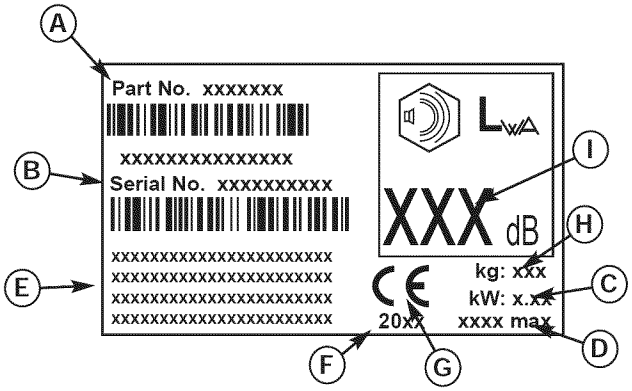
CE IDENTIFICATION TAG MARKINGS

A. Manufacturer's Identification Number
B. Manufacturer's Serial Number
C. Power Rating in Kilowatts
D. Maximum Engine Speed in Rotations per Minute
E. Manufacturer's Name and Address
F. Year of Manufacture
G. CE Compliance Logo
H. Mass of Unit in Kilograms
I. Guaranteed Sound Power in Decibels

Product Identification Numbers



PRODUCT REFERENCE DATA	
Model Description Name/Number	
Unit MFG Number	Unit SERIAL Number
Mower Deck MFG Number	Mower Deck SERIAL Number
Dealer Name	Date Purchased
ENGINE REFERENCE DATA	
Engine Make	Engine Model
Engine Type/Spec	Engine Code/Serial Number



Features & Controls

Please take a moment and familiarize yourself with the name, location, and function of these controls *so that you will better understand the safety and operating instructions provided in this manual.*

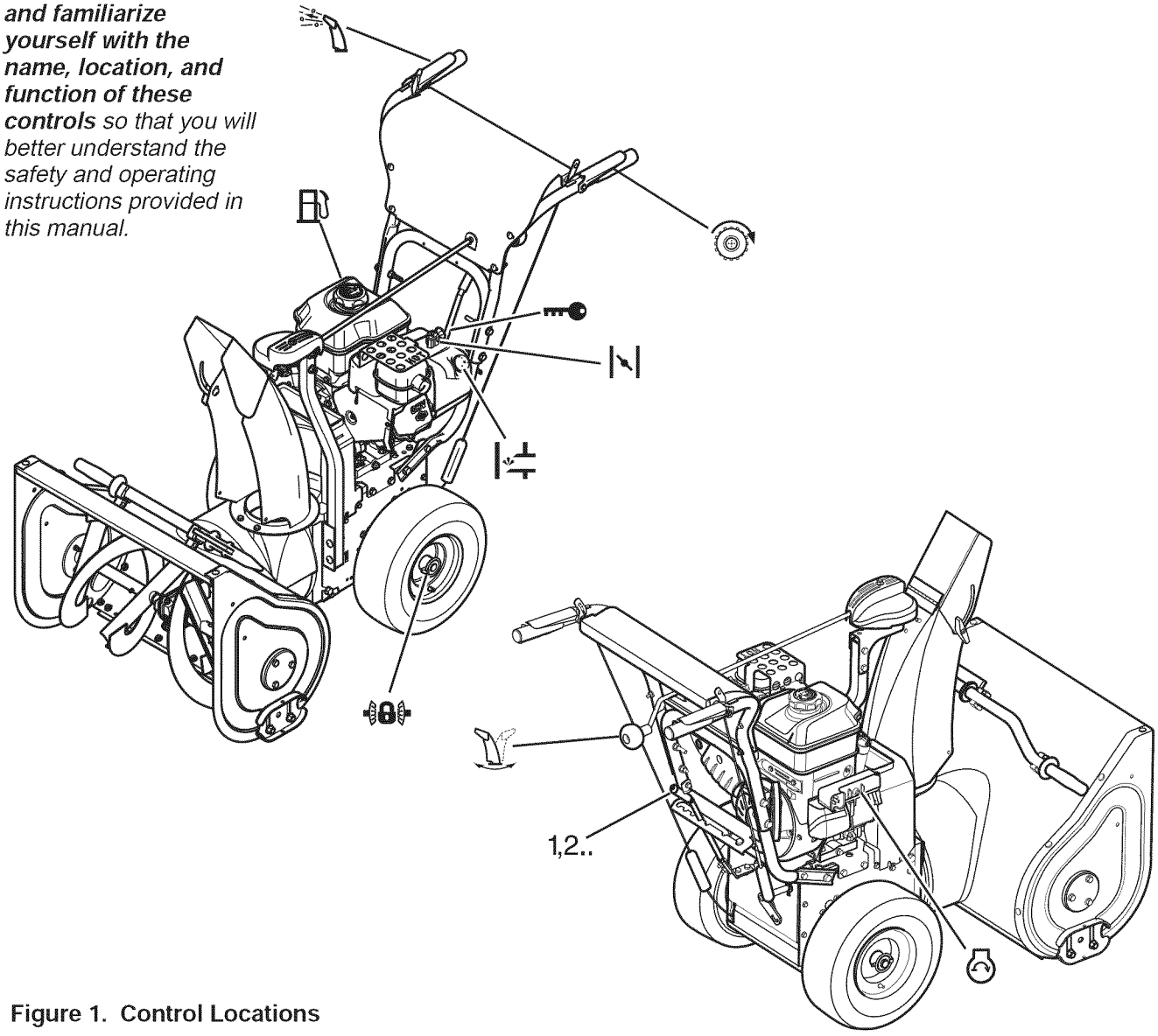


Figure 1. Control Locations

CONTROL LOCATIONS

The information below briefly describes the function of individual controls. Starting, stopping, and driving require the combined use of several controls applied in specific sequences. To learn what combination and sequence of controls to use for various tasks see the OPERATION section.

1,2.. Speed Selector

Selects forward speeds 1-6 and reverse speeds 1-2. No neutral position or gate is required, since the traction drive design automatically provides "neutral" (no forward or reverse movement), whenever the Drive Control is released.

Auger Control

Engages the auger/impeller when depressed. Releasing the control stops the auger/impeller.

Drive Control

Engages the traction drive to wheels when depressed. Releasing the control stops the traction drive.

Chute Direction Control

Rotating the knob to the left will turn the spout to the left side and rotating the knob to the right will rotate the spout to the right side.

Chute Deflector Control

Chute Deflector Knob: Locks chute deflector in desired position. Tilting the chute deflector UP provides a higher stream and greater distance, while tilting the deflector DOWN provides a lower stream and less distance.

Traction Locking Pins

Traction Lock Pins: The wheels can be completely released using the locking pin (see Figure 11). This allows the unit to be easily moved with the engine off.

On/Stop Switch

Turn the the switch to the ON position to operate the engine. Turn the switch to the OFF position to stop the engine.

Starter

Electric Start (Select Models): Depressing the starter button activates the electric starter. The electric start button operates on AC current, which is provided by connection of the extension cord provided. Connect this extension cord ONLY to a properly grounded 3 prong electrical outlet.

Recoil Starter (All Models): Pulling the recoil handle cranks the engine.

Fuel

Fuel tank filler cap (see illustration). Note: The fuel shut off valve is located under the fuel tank or on the front of the engine. Close the valve when the snowthrower is not in use. Open the valve before starting.

Primer Button

When pressed, the primer button provides initial fuel to help start a cold engine. Normally, pressing the primer button twice will provide enough fuel to start a cold engine.

Engine Key

The engine key prevents the engine from being started. The key must be fully inserted into the key slot for the unit to start. The key can also used to stop the engine by pulling the key out of the key slot.

Choke Knob

The choke knob adjusts the air/fuel mixture, and is used to help start a cold engine by providing a richer mixture. Once the engine is warm and running smoothly, the choke knob should be set to the off position to provide a normal air/fuel mix.

Operation

GENERAL OPERATION

CHECKS BEFORE EACH START-UP

1. Make sure all safety guards are in place and all nuts, bolts and clips are secure.
2. Check to make sure that the clean-out is attached to the auger housing. Do not operate the machine without the clean-out tool properly stored on the auger housing.
3. Check the engine oil level. See your engine owner's manual for procedure and specifications.
4. Check to make sure spark plug wire is attached and spark plug is tightened securely. If necessary, torque spark plug to 15 ft. lbs.
5. Check the fuel supply. Fill the tank no closer than 1/4 to 1/2 inch of top of tank to provide space for expansion. See your engine owner's manual for fuel recommendations.
6. Check the scraper bar to make sure it is set at the desired height. Adjust the skid shoes if necessary.
7. Check the drive control (,Figure 1), and auger control (,Figure 1) for proper operation. If adjustment is required, see the service section for procedures.
8. Check the chute direction control (,Figure 1) for proper operation. The discharge chute should rotate freely in both directions. See the service section for adjustment procedures and troubleshooting.
9. Check the chute deflector (Figure 1) for proper operation. The deflector should pivot freely up and down when knob is loosened.
10. Position the chute at the desired starting direction and set the deflector at the desired angle.
11. Check the speed selector (1,2..,Figure 1) for smooth operation. The control must move freely into each speed position gate and remain in position when released. If the speed selector does not move freely into all forward and reverse speed positions, contact your local authorized dealer for assistance.

⚠WARNING

This unit is a "two-stage" snowthrower.

The first stage is the auger, which feeds the snow back into the impeller housing. The second stage is the impeller, which throws the snow out the discharge chute. If bodily contact is made with the auger or impeller when they are rotating, severe personal injury will occur.

To avoid injury, keep others and yourself away from the auger and the discharge chute whenever the engine is running. Read and follow all of the safety rules and warnings in this manual.

⚠DANGER

Do not clean out discharge chute with hands. Contact with moving parts inside chute will cause serious injury. Use clean out tool provided with machine. Use the following procedure to remove objects or clear the chute:

1. Stop the engine. Remove the key
2. Wait 10 seconds to be sure the auger/impeller blades have stopped rotating.
3. Always use the clean-out tool. DO NOT use your hands.

⚠WARNING

For your safety, operation on slopes should be in an up and down direction only. If it becomes necessary to move across the face of a slope, use caution and do not blow snow. Be very careful when changing direction on a slope.

Proper winter footwear is recommended for the operator to help prevent slipping. Never attempt to clean snow from excessively steep slopes. The maximum slope for any operation is 17.7% (10°).

⚠WARNING

Gasoline is highly flammable and must be handled with care. Never fill the tank when the engine is hot or running. Always move outdoors to fill the tank. Keep snowthrower and gasoline away from open flame or spark.

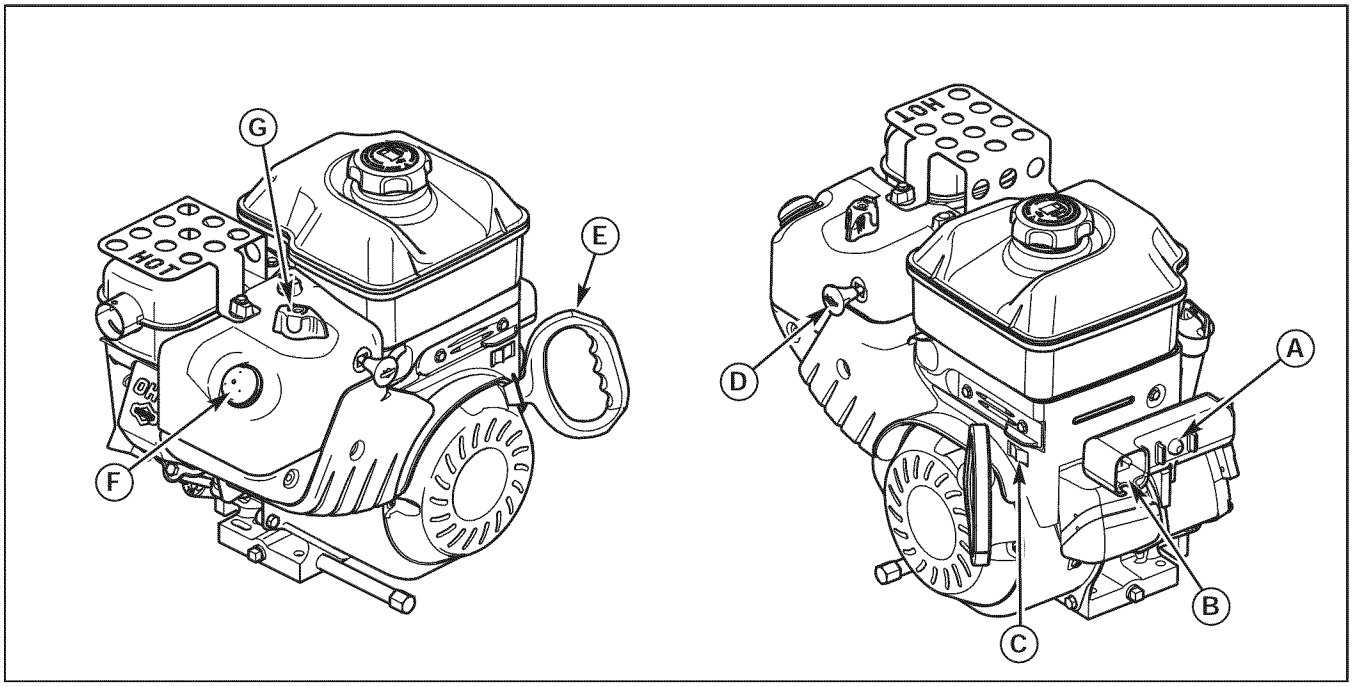


Figure 2. Engine Controls
A. Electric Start Button (Select Models)
B. Electric Start Connection (Select Models)
C. Stop Switch
D. Engine Key
E. Starter Handle
F. Primer Button
G. Choke Knob

STARTING CONTROLS

See Figure 2 for the following instructions.

Electric Start

1. **Electric Start Button** - The Electric Start Button (A) activates an electric starter mounted to the engine, eliminating the need to pull the starter handle. The Electric Start Button operates on AC current, which is provided by connection (B) to the extension cord provided with units equipped with this feature. ***Connect this extension cord ONLY to a properly grounded 3 prong electrical outlet.***

Manual Start

2. **Starter Handle** - The starter handle (E) connects to a starter cord to manually start the engine. Pulling starter handle rapidly spins the engine crankshaft, cycles the engine, and generates the spark necessary for starting the engine.
3. **Primer Button** - When pressed, the primer button (F) provides initial fuel to help start a cold engine. Normally, pressing the primer button twice will provide enough fuel to start a cold engine.
4. **Engine Key** - The engine key (D) prevents the engine from being started by unauthorized individuals. The key must be fully inserted into the key slot for the unit to start. The key is also used to stop the engine by pulling the key out of the key slot.
5. **Choke Knob** - The choke knob (G) adjusts the air/fuel mixture, and is used to help start a cold engine by providing a richer mixture. Once the engine is warm and running smoothly, the choke knob should be set to the off position to provide a normal air/fuel mix.
6. **Stop Switch** - Switch (C) to the ON position to operate the engine. Switch to the OFF position to stop the engine.

Operation

STARTING THE ENGINE

1. Check the oil level. See the Engine Manual ***How to Check/Add Oil*** section
2. Make sure equipment drive controls are disengaged.
3. Push the stop switch to the on position (A, Figure 3).

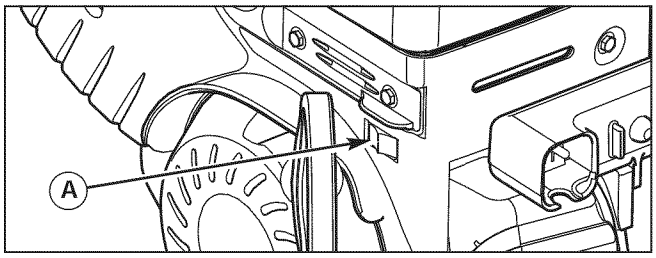


Figure 3. On/Stop Switch
A. On/Stop Switch Selector

4. Insert the engine key (A, Figure 4) into the engine key slot and push fully in to the RUN position.
5. Turn the choke knob (B) fully clockwise if engine is cold.

Note: Do not use the choke to start a warm engine.

6. Push the primer button (C) two times.

Note: Do not use the primer to start a warm engine.

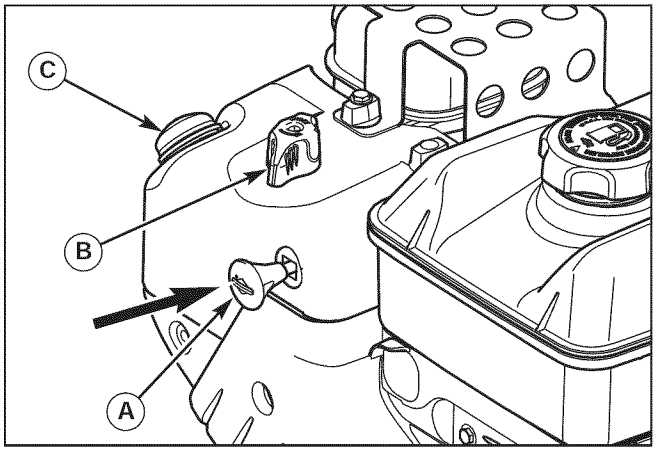


Figure 4. Safety Key, Choke, and Primer Button
A. Safety Key
B. Choke Control Knob
C. Primer Button

7. **Rewind Start:** Firmly hold the starter cord handle (A, Figure 5). Pull the starter cord handle slowly until resistance is felt, then pull rapidly.

⚠ WARNING

Rapid retraction of the starter cord (kickback) will pull your hand and arm toward the engine faster than you can let go. Broken bones, fractures, bruises or sprains could result. When starting engine, pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.

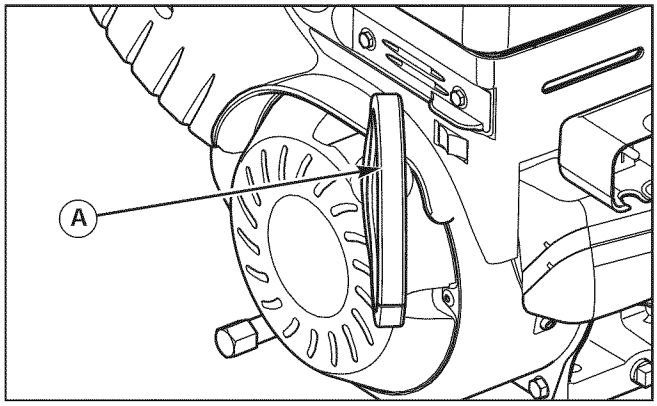


Figure 5. Rewind Start
A. Starter Cord Handle

Note: If the engine does not start after three attempts, see the Engine Manual ***Troubleshooting*** *section.*

8. **Electric Start:** First connect the extension cord to the power cord receptacle and then into a wall receptacle. If additional extension cord is required, make sure it is 3-wire.

⚠ WARNING

If the extension cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person to avoid to avoid a hazard.

9. **Electric Start:** Depress the push button (A, Figure 6). After you start the engine, first disconnect the extension cord from the wall receptacle and then from the power cord receptacle (B).

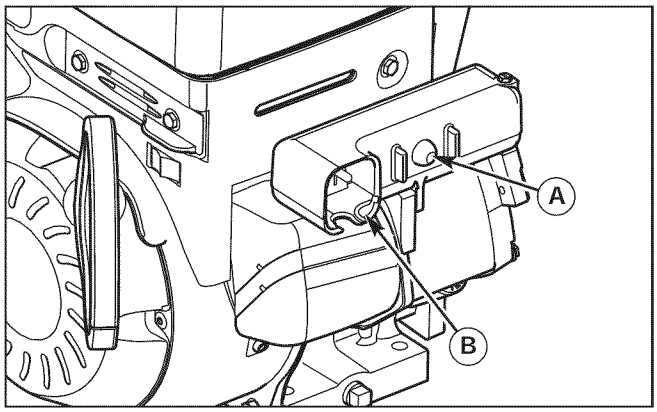


Figure 6. Electric Start
A. Starter Push Button
B. Power Cord Receptacle

⚠ CAUTION

To extend the life of the starter, use short starting cycles (five seconds maximum.) Wait one minute between starting cycles.

Note: If the engine does not start after three attempts, see the Engine Manual ***Troubleshooting*** *section.*

STOPPING THE ENGINE

⚠WARNING

Gasoline and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

DO NOT choke the carborator to stop the engine.

1. Move the stop switch (A, Figure 7) to the stop position.
2. Remove the safety key (B). Keep the safety key out of reach of children.

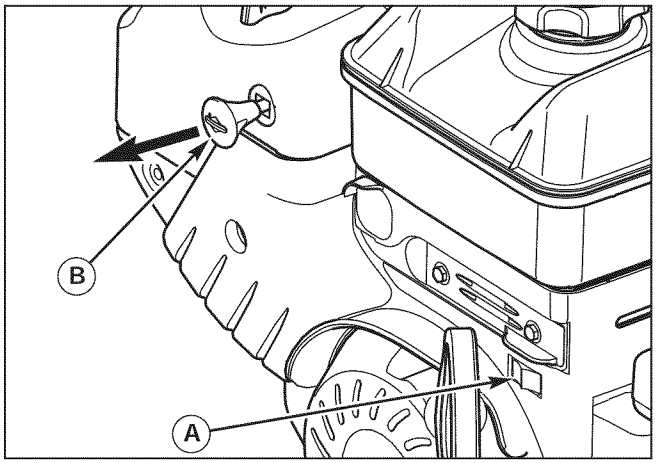


Figure 7. Stopping the Engine
A. On/Stop Switch
B. Safety Key

OPERATING THE SNOWTHROWER

1. Rotate the discharge chute (D, Figure 8) to the desired direction.
2. Set the speed selector (A) to the desired forward speed.
3. Fully press and hold the auger engage control (C) on the right-hand grip to begin auger rotation. Releasing the auger engage control will disengage the auger.
4. Fully press and hold the traction Control lever (B) on the left-hand grip to engage the traction drive and begin moving the snowthrower. To disengage the traction drive, completely release the lever.
5. Select forward or reverse speeds as needed using the Speed Selector (A). Release the traction lever before changing drive speeds.

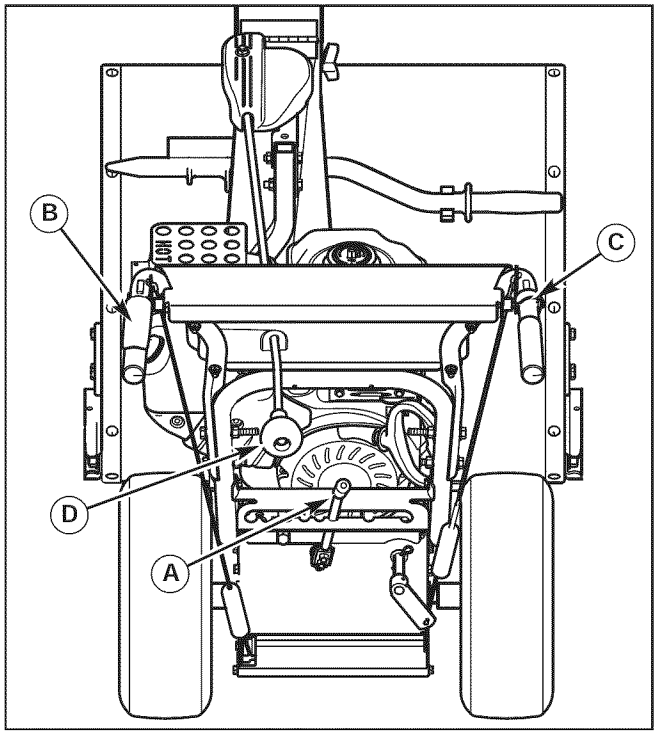


Figure 8. Controls (from operator's position)
A. Speed Selector
B. Traction Control
C. Auger Engage Control
D. Chute Rotator Control

GROUND SPEED SELECTOR

Use the speed selector (A, Figure 8) to control the drive speed of the snowthrower. There are six forward speeds and two reverse speeds.

Use the lower speeds to blow deep or wet snow. Use the higher speeds to blow light snow or to drive the snow-thrower without blowing snow.

To change speeds, release the traction control lever (B), then move the speed selector to the desired setting. Fully depress the control lever to resume.

ENGINE SPEED

Always run the snowthrower at full throttle.

Operation

DEFLECTOR

The distance of the discharged snow is mainly controlled by the position of the deflector. (Engine speed also affects distance of discharge.) The more the deflector is tilted UP, the farther snow will be thrown.

1. Rotate the adjustment knob (C, Figure 9) counterclockwise to loosen then adjust the deflector to the desired position and tighten the deflector adjustment knob by turning it clockwise to secure the deflector in position.

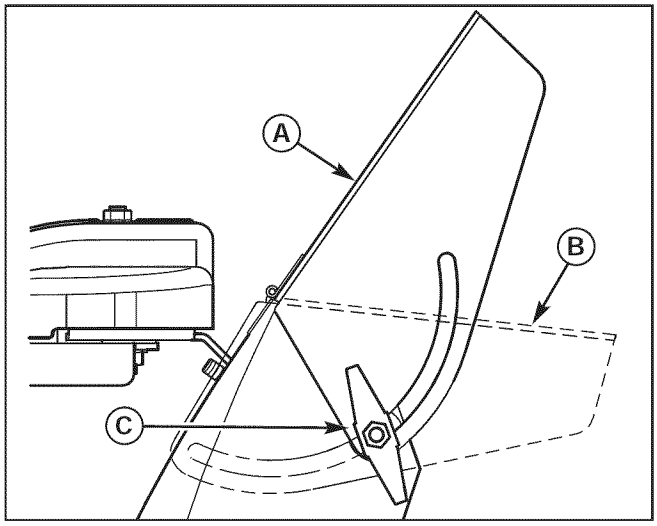


Figure 9. Deflector Control
A. Maximum Throwing Position
B. Minimum Throwing Position
C. Deflector Adjustment Knob

SCRAPER BAR & SKID SHOES

On smooth surfaces such as concrete or asphalt, the scraper bar (A, Figure 10) should scrape the surface. On surfaces such as gravel, the scraper bar should be high enough so that it will not pick up gravel or debris.

The height of the scraper bar (A) is controlled by raising or lowering the skid shoes (B).

1. To raise the scraper bar height, rest the scraper bar (A) on a strip of wood equal in thickness to the desired height.
2. Make sure the scraper bar is parallel to the ground surface.
3. Loosen the skid shoe nuts (C) and let the skid shoes (B) drop to the surface.
4. Tighten the nuts (C), making sure the skid shoes are adjusted equally and are parallel to the surface.
5. To lower the height of the scraper bar, raise the skid shoes.
6. If the scraper bar becomes worn, it can be replaced by removing the hardware attaching it to the snowthrower.

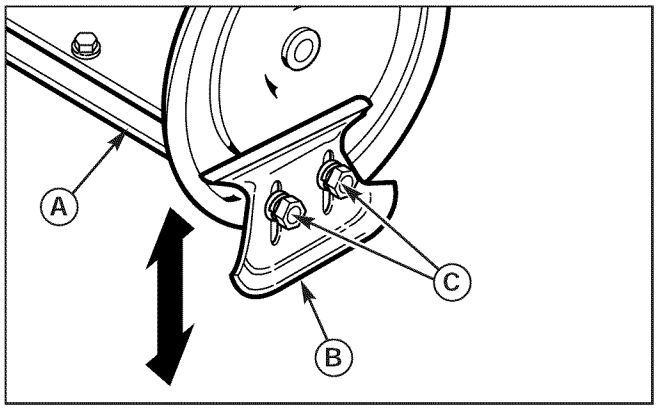


Figure 10. Skid Shoe Adjustment
A. Scraper Bar
B. Skid Shoe
C. Nuts

TRACTION DRIVE LOCK

When Pushing the Snowthrower:

For easy turning when pushing the snowthrower, disengage the right wheel using the traction lock pin (See Figure 11.)

1. Turn the unit off, remove the engine key, and disconnect the spark plug wire.
2. To DISENGAGE the traction drive lock, insert the Traction Lock Pin (A, Figure 11) through the outer hole in the right axle. The unit can now be pushed with minimal resistance.
3. To ENGAGE the traction drive lock, align the hole in the hub with the inner hole in the axle, and install the Traction Lock Pin (B).

NOTE: Be sure both wheels are locked (locking pin in inner hole) when clearing snow.

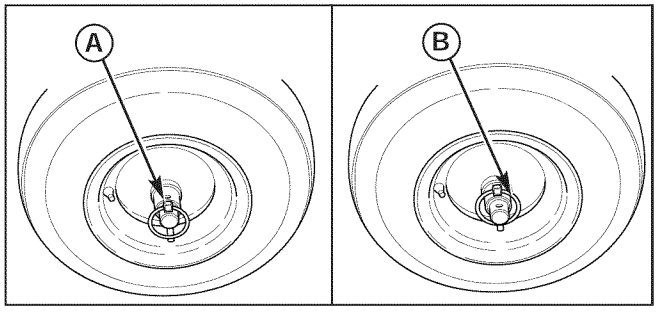


Figure 11. Traction Drive Lock
A. Pin in Outer Hole (Freewheel)
B. Pin in Inner Hole (Drive)

CLEARING A CLOGGED DISCHARGE CHUTE

Hand contact with the rotating auger/impeller inside the discharge chute is the most common cause of injury associated with snowthrowers. DO NOT use your hand to clean out the discharge chute. To clear the chute:

1. Stop the engine. Remove the key
2. Wait 10 seconds to be sure the auger/impeller blades have stopped rotating.
3. Use the clean-out tool to remove clogs. DO NOT use your hands.

AFTER EACH USE

Normal use of the snowthrower may result in a build-up of packed snow in and around the starter cord housing and around engine controls. Heat from the engine will usually prevent the snow from freezing solid while the unit is running, but after the engine is shut down, some snow may continue melting from engine heat, and later freeze around some moving parts as the unit cools.

After each period of use, follow these steps to prevent freeze-up caused by ice formation in and around the engine controls and external parts.

1. Before shutting off the engine, pull the starter rope out 2 - 3 times, and allow it to rewind slowly. This will help clear packed snow from the starter cord area. Allow the engine to run for several minutes.
2. Stop the engine by pushing the stop switch (C, Figure 2) to the off position then pull out the engine key (D, Figure 2).
3. Brush snow and ice from the snowthrower. Be sure to clear engine and snowthrower controls, discharge chute, and chute rod gears, clutch cable areas, and anywhere else snow has accumulated.
4. Always remove the engine key and store in a safe place to prevent unauthorized use.

⚠ WARNING

Never store the unit (with fuel) in an enclosed, poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion.

Fuel vapor is also toxic to humans and animals.

5. If the snowthrower is kept in a cold shelter, fill the fuel tank to prevent condensation. Do not store near sparks or flame.

Note: The Engine Owner's Manual contains further information on preventing ice formation and freeze-up.

⚠ WARNING

Never store the unit, with gasoline in engine or fuel tank, in a heated shelter or in enclosed, poorly ventilated enclosures. Gasoline fumes may reach an open flame, spark or pilot light (such as a furnace, water heater, clothes dryer, etc.) and cause an explosion.

Handle gasoline carefully. It is highly flammable and careless use could result in serious fire damage to your person or property.

Drain fuel into an approved container outdoors away from open flame or sparks.

STORAGE

⚠ WARNING

Never store the unit (with fuel) in an enclosed, poorly ventilated structure. Fuel vapors can travel to an ignition source (such as a furnace, water heater, etc.) and cause an explosion.

Fuel vapor is also toxic to humans and animals.

Before you store your unit for the off-season, read the Maintenance and Storage instructions in the Safety Rules section, then perform the following steps:

- Perform engine maintenance and storage measures listed in the engine owner's manual. This includes draining the fuel system, or adding stabilizer to the fuel (do not store a fueled unit in an enclosed structure - see warning).

Before starting the unit after it has been stored:

- Check all fluid levels. Check all maintenance items.
- Perform all recommended checks and procedures found in the engine owner's manual.
- Allow the engine to warm up for several minutes before use.

Regular Maintenance

MAINTENANCE SCHEDULE

MAINTENANCE REQUIRED	FREQUENCY	NOTES
Check / Lubricate Hand Linkage.	10 Hours	10W Oil
Lubricate snowthrower.	10 Hours	10W Oil and Grease
Check tire pressure.	Monthly	20 psi (1.37 bar)
Change engine oil.*+	50 Hours	See Engine Manual
Clean or replace spark plug.+	Yearly	See Engine Manual
Check drive linkage/belt tension.	4-6 Hours	See page 24
Lubricate Axle Shafts.	Yearly	Lithium Grease
Check auger gear case lubrication.**	25 Hours	Benalene Grease
Lubricate Auger Shaft.***	10 Hours	Lithium Grease

* Change original oil after two hours of operation.
** Check grease level each fall and spring.
+ See your engine Owner's Manual.
***Lubricate each fall and spring.

CHECKING TIRE PRESSURE

The air pressure in each tire (Figure 12) should be equal for both tires for best performance. Be sure to keep caps on valves to prevent entry of debris into the valve stem when tires are filled.

Size	PSI	bar
13 x 5.0	20	1,37

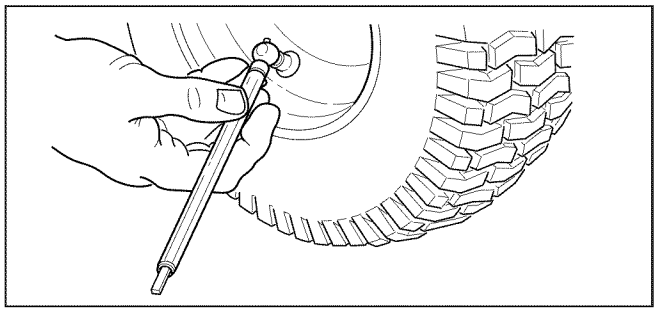


Figure 12. Checking Tire Pressure

AUGER GEAR CASE LUBRICATION

1. Place the snowthrower on a level surface.
2. Remove the bolt (A, Figure 13).
3. Check the lubricant level. It should be level with the lower edge of the plug opening. If not, add Benalene grease.
4. Re-install bolt, and tighten securely.

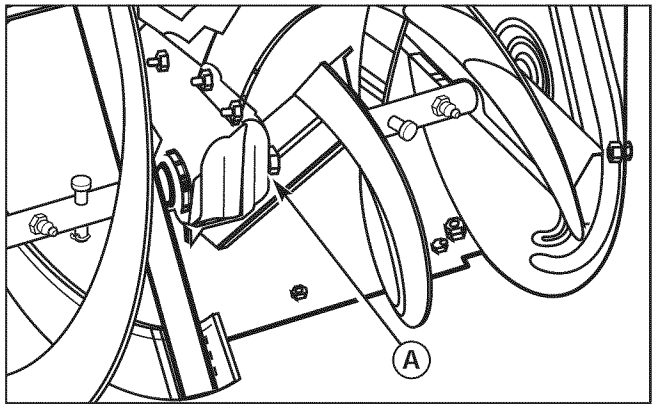


Figure 13. Auger Lubrication
A. Bolt

LUBRICATION

IMPORTANT NOTE

It is very important that grease fittings on the auger shaft are lubricated regularly. If auger rusts to shaft, damage to worm gear may occur if shear pins do not break.

To prevent wheels rusting to axles, it is also necessary to remove the wheels and grease the axles regularly.

Remove wheels and grease axles once each year.

Apply 5W-30 synthetic motor oil sparingly to the friction disk drive hex shaft (A, Figure 15).

Apply medium weight (10W) oil to points shown (See Figures 14-17).

Generally, all moving metal parts should be oiled where contact is made with other parts. Keep oil and grease off belts, pulley grooves, drive disc, and friction disc.

LUBRICATION NOTES:

Grease locations indicated by grease gun symbol. Use grease fittings when present. Disassemble parts to apply grease to moving parts when grease fittings are not installed.

Oil locations indicated by oil can symbol. Do not allow oil to drip onto traction drive or friction disc.

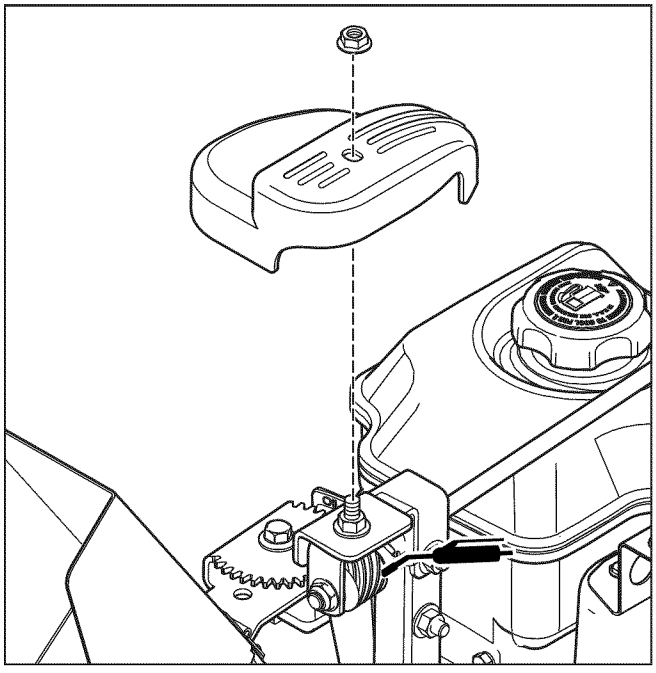


Figure 14. Lubricate Spout Rotator

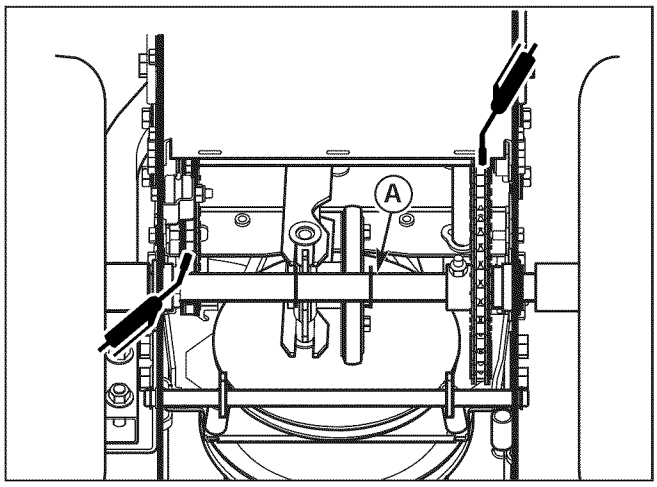


Figure 15. Drive Lubrication
A. Hex Shaft

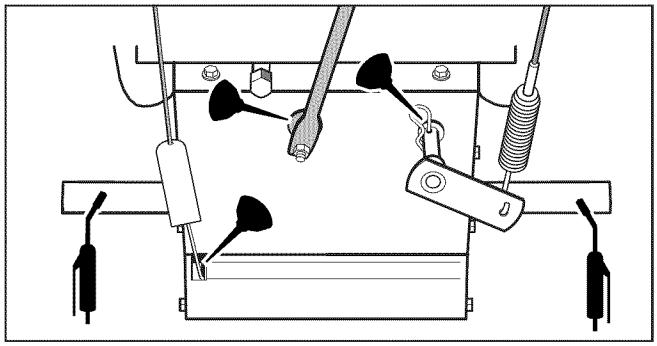


Figure 16. Lubricate Axles and Control Levers

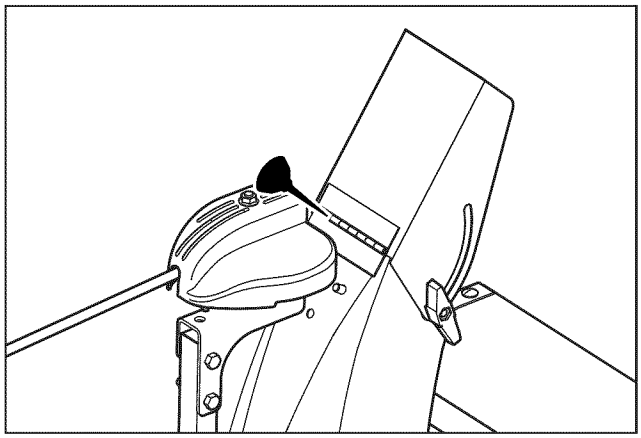


Figure 17. Deflector Hinge

Regular Maintenance

CHECK / LUBRICATE LINKAGE

Check the function of the Hand controls: the controls should function as described in the CONTROLS section. **It is critical for the safe operation of the unit that the controls disengage when released.**

Lubricate as shown in figure 18.

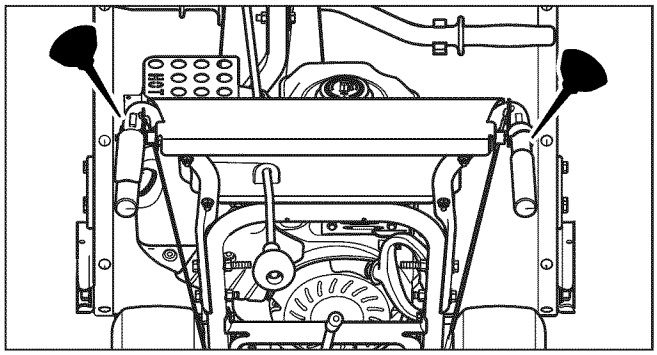


Figure 18. Lubricate Hand Control

IMPORTANT NOTE

If the controls do not function properly, lubricate them. If lubrication does not rectify the problem, see your dealer. Under no circumstances should the unit be used if the controls are not functioning properly.

IMPORTANT NOTE

It is very important that grease fittings on the auger shaft are lubricated regularly. If auger rusts to shaft, damage to worm gear may occur if shear pins do not break.

LUBRICATING THE AUGER SHAFT & ASSEMBLY

1. Remove cotter pin (C, Figure 19) and shear pin (B).
2. Use a grease gun and squirt several shots of grease into grease fitting (A).
3. Rotate auger assembly (D) several times to distribute the grease evenly. Repeat step 2.
4. Reinstall shear pin (B) and cotter pin (C).
5. Repeat procedure for other side.

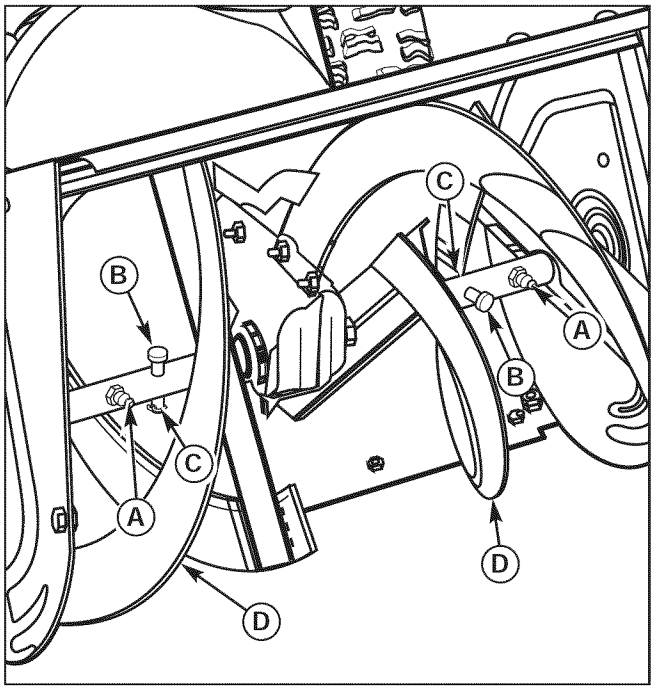


Figure 19. Lubricating the Auger Shaft Assembly

A. Grease Fittings
B. Shear Pins
C. Cotter Pins
D. Auger Assembly

Troubleshooting

TROUBLESHOOTING

This section provides troubleshooting and service instructions. Locate the problem and check the possible cause/remedy in the order listed.

Also, refer to the engine manufacturer's Owner's Manual for additional information.

For problems not covered here, contact your local dealer.

⚠ WARNING

Before performing any adjustment or service to snowthrower, stop the engine and wait for moving parts to stop. Remove the key. To prevent accidental starting, disconnect the spark plug wire and fasten away from the plug.

PROBLEM	POSSIBLE CAUSE	REMEDY
Engine fails to start.	1. Key is OFF.	1. Push key in to the ON position.
	2. Failure to prime cold engine	2. Press primer button twice and restart.
	3. Out of fuel	3. Fill fuel tank.
	4. Choke OFF - cold engine.	4. Turn choke to ON.
	5. Engine flooded.	5. Turn choke to OFF; try starting.
	6. No spark.	6. Check gap. Gap plug, clean electrode, or replace plug as necessary.
	7. Water in fuel, or old fuel.	7. Drain tank (Dispose of fuel at an authorized hazardous waste facility). Fill with fresh fuel.
Engine starts hard or runs poorly.	1. Fuel mixture too rich.	1. Move choke to OFF position.
	2. Carburetor adjusted incorrectly.	2. See your dealer for adjustments.
	3. Spark plug faulty, fouled, or gapped improperly.	3. Clean and gap, or replace.
	4. Fuel cap vent is blocked.	4. Clear vent.
Scraper bar does not clean hard surface.	1. Skid shoes improperly adjusted.	1. RAISE skid shoes (this lowers the scraper bar).
	1. Skid shoes improperly adjusted.	1. LOWER skid shoes (this raises the scraper bar.)
Auger does not rotate.	1. Auger control not engaged.	1. Engage auger control.
	2. Foreign matter blocking auger.	2. STOP engine and REMOVE the key. DISCONNECT the spark plug wire. Clear auger using clean-out tool. See warning in SAFETY RULES.
	3. Auger drive clutch cable slack.	3. Tighten to remove slack. See auger clutch cable adjustment.
	4. Auger drive belt slipping.	4. Check auger drive belt adjustment.
	5. Broken belt.	5. Replace belt.
	6. Shear pin broken.	6. Replace shear pin.

PROBLEM	POSSIBLE CAUSE	REMEDY
Auger rotates, but snow is not thrown far enough	1. Chute deflector too low.	1. Adjust deflector as necessary.
	2. Ground speed too fast.	2. Use slower speed selector setting.
	3. Snowthrower discharge chute clogged.	3. STOP engine and REMOVE the key. DISCONNECT the spark plug wire. Clear auger using clean-out tool. See warning in SAFETY RULES.
	4. Auger belt loose or worn.	4. Check auger drive belt adjustment
Poor traction	1. Tires slipping.	1. Check tire pressure and tread.
Auger does not stop when auger lever is released	1. Auger clutch cable too tight or bent.	1. Loosen or straighten clutch cable.
	2. Auger clutch belt too tight.	2. Adjust auger belt.
	3. Auger belt guide out of adjustment.	3. Adjust auger belt guide.
Snowthrower does not stop when drive lever is released	1. Traction drive clutch cable bent or too tight.	1.Loosen cable to add slack or replace. See adjustment procedure.
	2. Drive belt loose, broken, or stretched.	2. Replace drive belt.
	3. Drive roller chain damaged.	3. Replace chain.
	4. Traction lock pins in free-Wheeling position(OUTER hole).	4. Change traction lock pins to INNER hole to engage traction drive.
	5. Friction disc worn.	5. Replace disc (see your dealer).
Snowthrower does not drive and auger does not rotate.	1. Belts are wet.	1. Clean snow and moisture off of snowthrower and allow belts to dry.
	2. Traction drive clutch cable loose.	2. Tighten to remove slack. See adjustment procedure.
Discharge control is difficult to operate.	1. Gearing needs lubrication	1. Oil or grease as required.
	2. Gear not adjusted properly.	2. Adjust gear. See adjustment procedure.
Snowthrower veers to one side.	1. Tire pressure not equal.	1. Check tire pressure.
	2. One wheel is set in free-wheeling mode. (Traction Lock Pin is in the OUTER hole).	2. Make certain the right traction lock pin is in the INNER holes (to engage traction drive, STD drive).
Excessive vibration.	1. Loose parts or damaged auger.	1. STOP engine and REMOVE the key. DISCONNECT the spark plug wire. Tighten all hardware. Replace auger if necessary. If vibration continues, see your dealer.
Drive fails to move snowthrower at slow speeds.	1. Traction drive out of adjustment.	1. Readjust drive, or shift speed selector setting up one speed faster.
Speed selector difficult to move or frozen in place.	1. Hex shaft needs lubrication.	1. Lubricate hex shaft with 5W-50 synthetic motor oil (see Maintenance).

Adjustments

AUGER DRIVE ADJUSTMENT

⚠ WARNING

Do not over-tighten, as this may lift the lever and cause auger drive to be engaged without depressing the Auger Control.

1. With the drive lever released, the hook (B, Figure 20) should barely touch the lever (C) without raising it. There can be a maximum 1/32" clearance as shown.
2. To adjust, loosen nut (D) by holding the adjusting flats (A) and turning nut (D). Turn adjustment flats and hold screw. The adjustment screw (E) is a phillips screw and the head can be held or turned by inserting a screwdriver through the spring (F).
3. Hold adjusting flats (A) and tighten nut (D).
4. Start unit and check auger. Auger must not be engaged unless auger control is depressed.
5. With engine running, fully depress auger control, the auger should engage and run normally.
6. Release auger control. **Auger must stop within 5 seconds.**
7. If auger does not operate properly, stop engine and recheck drive linkage adjustments.
8. If auger linkage is properly adjusted, auger drive belt tension may require adjustment. See adjusting the auger belt in this section of the manual

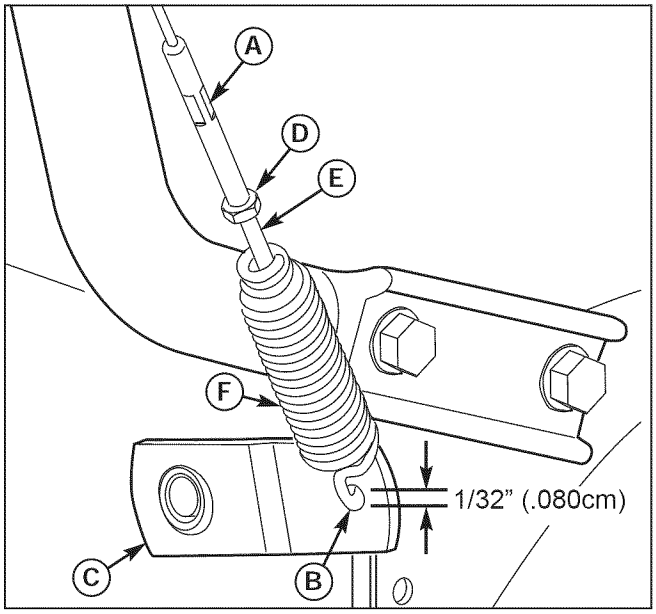


Figure 20. Auger Drive Adjustment
A. Adjusting Flats
B. Spring Hook
C. Lever
D. Adjustment Nut
E. Adjustment Screw
F. Spring

⚠ WARNING

Do not over-tighten, as this may cause traction drive to engage without depressing the traction drive control (arm must remain in up position).

Verify that the cables are not over-tightened: With speed selector in position 1 and traction drive control fully released, push snowthrower forward. The unit should move forward freely.

If unit does not move forward freely, the cable has been over-tightened. To remedy, loosen tension on clutch cable slightly, and recheck.

TRACTION DRIVE ADJUSTMENT

Initial Adjustment

1. With the drive lever released there should be slack in the cable when moved slightly from side to side.
2. To adjust tension on the cable slide the cable boot (A, Figure 21) off the cable adjustment bracket (D).
3. Move the "Z" hook (C) from the cable adjustment bracket (D) to a different adjustment hole. The cable should have slack. The cable should have no tension or load.

Note: If the cable is too slack the unit will not drive. If the cable is too tight the drive will be engaged without pushing the handle down.

4. Slide the cable boot (A) over the cable adjustment bracket.

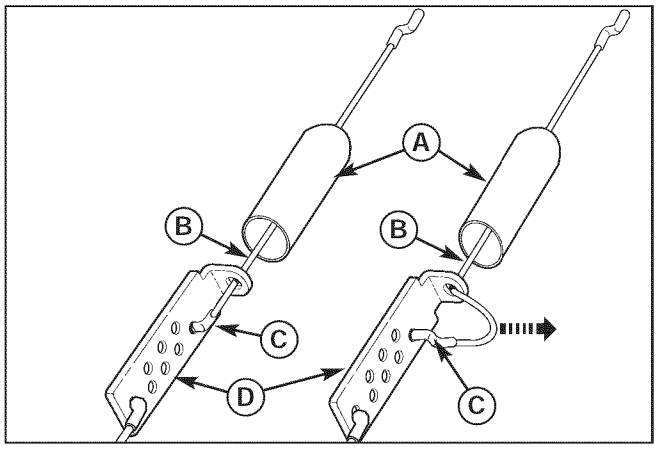


Figure 21. Traction Drive Cable Adjustment
A. Cable Boot
B. Traction Drive Cable
C. "Z" Hook
D. Cable Adjustment Bracket

Run-In Adjustment

ALL MODELS

1. After 5 hours of use, check for proper adjustment. Readjust clutch cable if necessary by increasing tension on cable. A small amount of arm movement is permissible if unit passes operating checks described in the Warning above.

⚠ WARNING

Gasoline is highly flammable and must be handled with care. Drain gasoline outdoors. Never drain the tank when the engine is still hot from recent operation. Do not allow open flame, smoking or matches in the area. Avoid over-filling and wipe up any spills.

2. Remove the gas from the gas tank.
3. Disconnect the spark plug wire.
4. Stand snowthrower on the front of the auger housing (C, Figure 22).
5. Remove the capscrews (A) on each side of the bottom panel (B).
6. Remove the bottom panel (B).

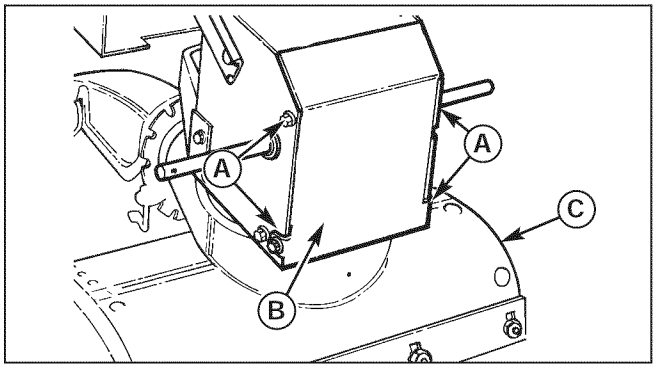


Figure 22. Bottom Cover
A. Capscrews
B. Bottom Panel
C. Auger Housing

7. Loosen shift lever screws (A, Figure 23), and position the shift speed lever in the lowest forward speed.

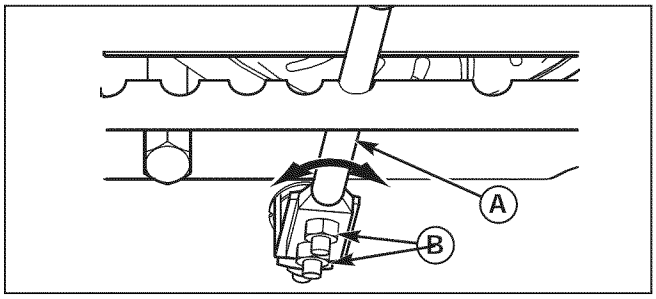


Figure 23. Shift Lever Adjustment
A. Shift Lever
B. Nuts, 1/4-20

8. Note the position of the friction wheel (A, Figure 24). The correct distance from the right side of the friction wheel to the outside of the frame is 4-5/16" (10.95 cm). If the friction wheel is not in the correct position, adjust as follows.
9. Move the friction wheel (A, Figure 24) to the correct distance, 4-5/16" (10.95 cm).
10. Tighten the 1/4-20 shift lever nuts (B, Figure 23) to 60 lb-in. (6,8 Nm).
11. Check that the snowthrower operates in R1. If not follow procedures 1-10 and readjust as necessary.
12. Install the bottom panel (B, Figure 22) and tighten the capscrews (A).

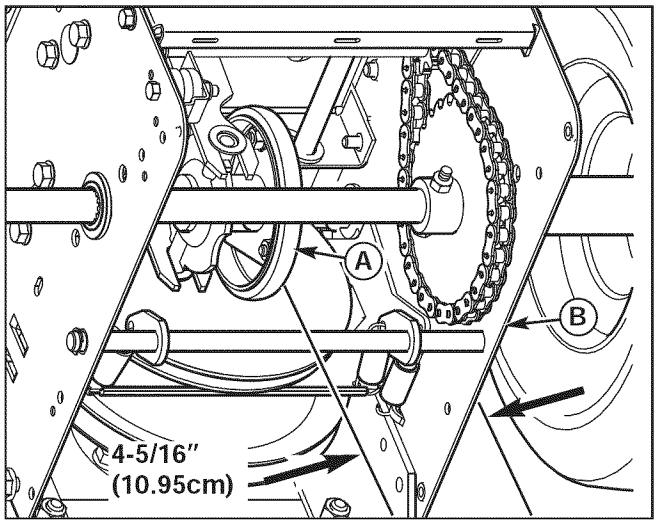


Figure 24. Friction Disc Measurement
A. Friction Wheel
B. Frame

Adjustments

BELT ADJUSTMENT

Auger Drive Belt

If your snowthrower will not discharge snow, check the control cable adjustment. If it is correct, then check the condition of the auger drive belt. If it is damaged or loose, replace it (see Belt Replacement in this section of the manual).

1. Disconnect spark plug wire.
2. Remove screw (B, Figure 25) from belt cover (A). Remove belt cover (A).
3. Loosen nut (D, Figure 25) on auger idler pulley (B) and move auger idler pulley towards belt about 1/8 inch (3mm).
4. Tighten nut (D).
5. Engage auger drive clutch. Check tension on belt (opposite idler pulley). Belt should deflect about 1/2 inch (12.5 mm) with moderate pressure see Figure 26). You may have to move the idler pulley more than once to obtain the correct tension.
6. Reinstall belt cover (A, Figure 25) securing with screws (B).
7. Whenever belts are adjusted or replaced, the cables will need to be adjusted. (see Cable Adjustment in this section of the manual).
8. Attach the spark plug wire.

Traction Drive Belt

The traction drive belt has constant spring pressure and does not require an adjustment. If the traction drive belt is slipping,replace the belt. See Belt Replacement in this section of the manual.

Note: After adjustments are complete, make sure the drive disengages when released.

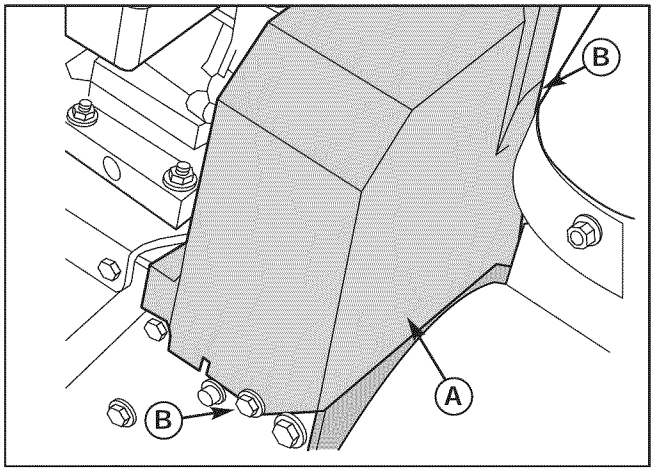


Figure 25. Belt Cover
A. Belt Cover
B. Screws, 1/4-20

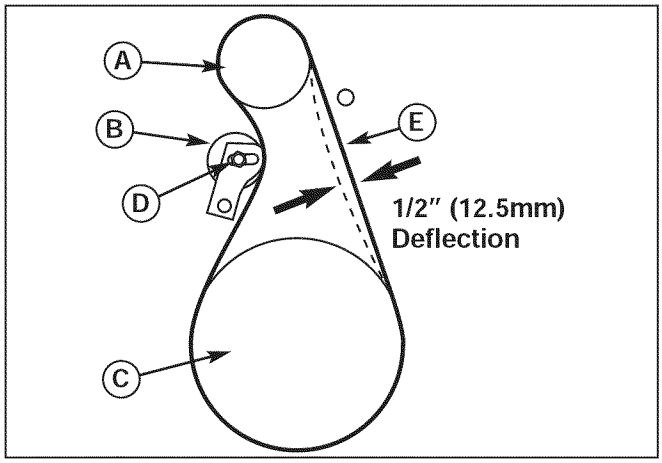


Figure 26. Auger Belt Deflection
A. Engine Drive Pulley
B. Idler Pulley (Engaged Position)
C. Auger Drive Pulley
D. Nut
E. Auger Belt

SHEAR PIN REPLACEMENT

⚠ WARNING

Do not go near the discharge chute or auger when the engine is running. Do not run the engine with any cover or guard removed.

Under most circumstances, if the auger strikes an object which could cause damage to the unit, the shear pin will break. (This protects the gear box and other parts from damage.)

The shear pins are located on the auger shaft as shown in Figure 27. To replace the shear pins, tap out the broken pin with a pin punch, and install a new shear pin and cotter pin. **Do NOT replace shear pins with anything other than the correct grade replacement shear pin.** (Use of bolts, screws or a harder shear pin will lead to damaged equipment.)

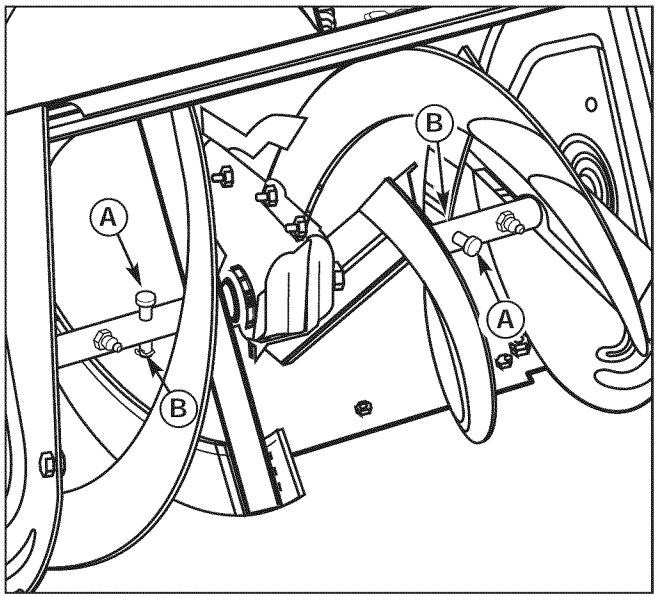


Figure 27. Shear Pins
A. Shear Pins
B. Cotter Pins

BELT GUIDE ADJUSTMENT

1. Disconnect spark plug wire.
2. Remove screws (B, Figure 25) from belt cover (A). Remove belt cover (A).
3. Measure the distance between the belt guide (B, Figure 28) and the belt (D). The distance should be 1/8 inch (3.18mm).
4. If adjustment is necessary, loosen belt guide capscrew (C). Move belt guide (B) to correct position. Tighten capscrew (C).
5. Reinstall belt cover (A, Figure 25) securing with screws (B).
6. Reconnect spark plug wire.

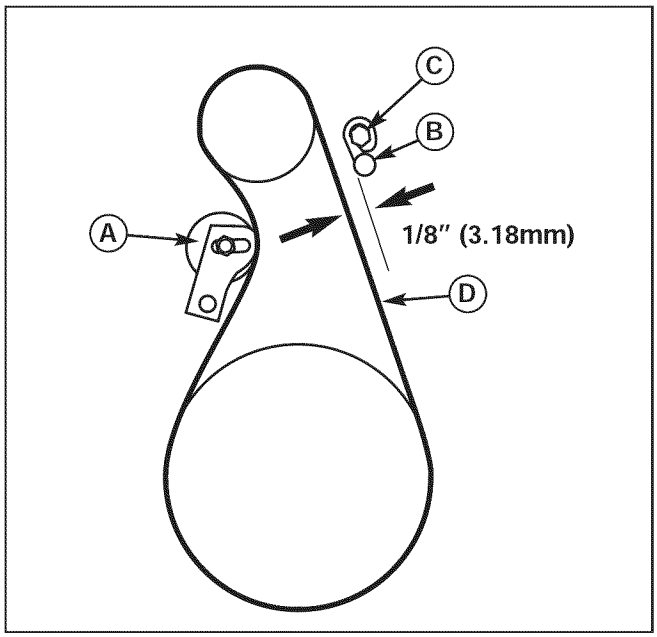


Figure 28. Belt Guide
A. Idler Pulley (Engaged Position)
B. Belt Guide
C. Capscrew
D. Belt

Service

BELT REPLACEMENT

Auger Drive Belt

The drive belts are of special construction and must be replaced with original factory replacement belts available from your nearest authorized service center. Some steps require the assistance of a second person. If the auger drive belt is damaged, the snow thrower will not discharge snow. Replace the damaged belt as follows.

1. Disconnect the spark plug wire.
2. Loosen the capscrews (A, Figure 28) on each side of the bottom panel (B).
3. Remove the bottom panel (B).

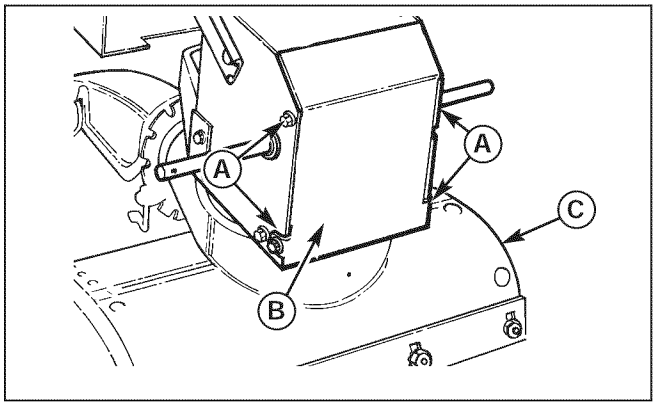


Figure 28. Bottom Cover
A. Capscrews
B. Bottom Panel
C. Auger Housing

4. Loosen screw (B, Figure 24) from belt cover (A). Remove belt cover (A).
5. Loosen the belt guide (B, Figure 29). Pull the belt guide away from the auger drive pulley (A).
6. Pull the auger idler pulley (K) away from the auger drive belt (D) and slip the belt off of the idler.
7. Remove the auger drive belt (D) from the engine pulley. To remove the auger drive belt (D), the auger drive pulley (C) may have to be partially rotated.

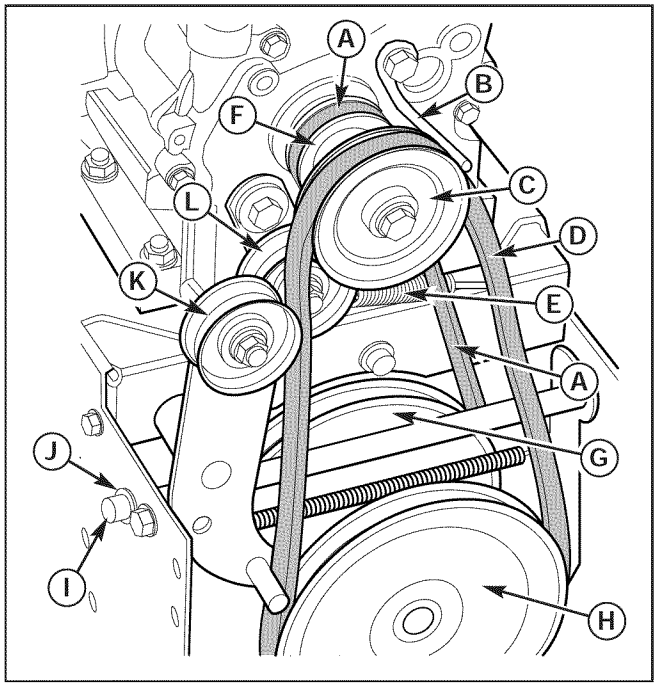


Figure 29. Pulleys and Belts
A. Traction Drive Belt
B. Belt Guide
C. Auger Drive Pulley, Engine
D. Auger Drive Belt
E. Traction Drive Spring
F. Traction Drive Pulley, Engine
G. Traction Drive Pulley
H. Impeller Pulley
I. Swing Plate Axle Rod
J. "E"-Ring
K. Auger Idler Pulley
L. Traction Drive Idler Pulley

8. Remove the 5/16 flange lock nut (B, Figure 30) securing the rotator cover (A).

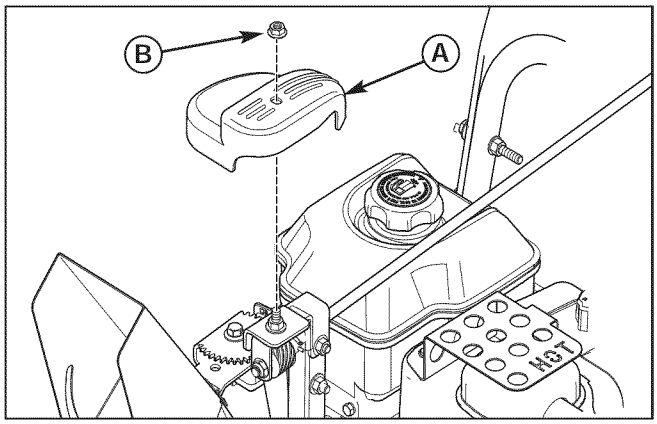


Figure 30. Rotator Cover Removal
A. Cover
B. Nut, flange, lock 5/16-18

9. Remove hair pin (A) and slide rod (B) backward about 3 inches (until shaft separates from the worm drive).

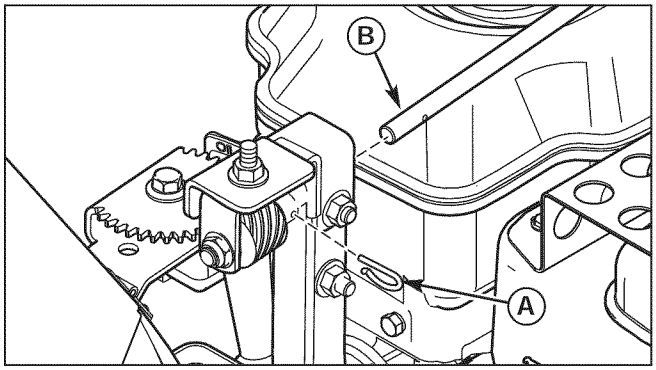


Figure 31. Rotator Shaft Removal
A. Pin, Hair
B. Shaft

10. Remove two 5/16-18 KEPS hex nuts (A, Figure 32), and two 5/16-18 x 1-1/2 carriage bolts (B) securing the offset tube (C) to the tube support bracket (D).

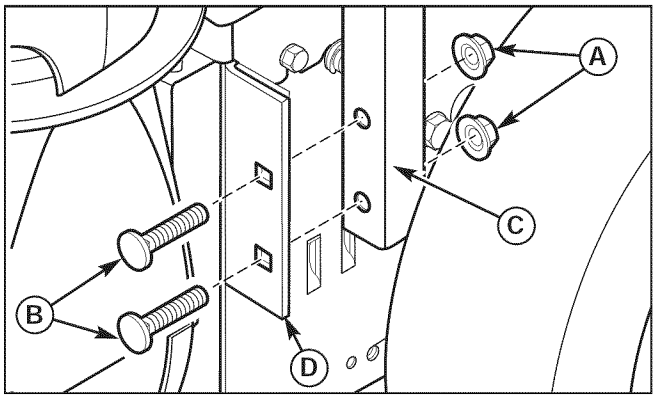


Figure 32. Offset Tube (Lower) Removal
A. Nuts, KEPS, hex, 5/16-18
B. Bolts, Carriage, 5/16 x 1-1/2
C. Tube, Offset
D. Bracket, tube support

11. Lift the Chute and rotator (A, Figure 33) off of the auger housing.

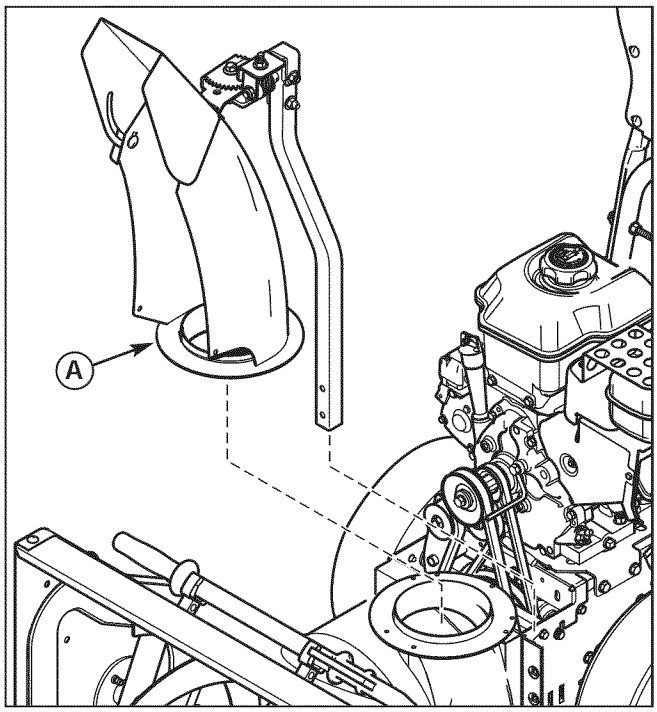


Figure 33. Chute and Rotator Removal
A. Chute and Rotator

12. Remove the upper four capscrews (A, Figure 34) that hold together the auger housing (C) and the frame (D). Loosen the lower two capscrews (B). The auger housing (C) and the frame (D) can now be split apart for removal of the belt.

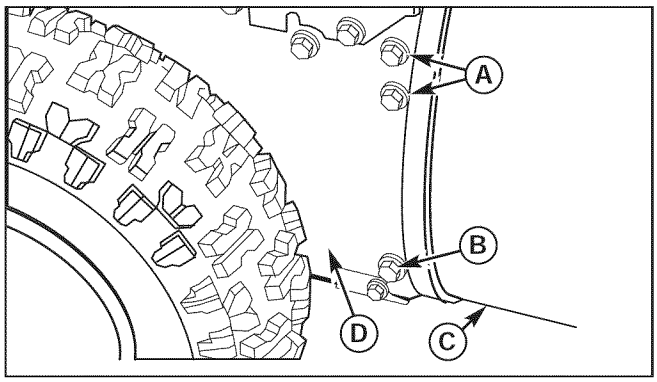


Figure 34. Frame and Axle Housing Splitting
A. Upper Capscrews
B. Lower Capscrews
C. Auger Housing
D. Frame

13. Remove the old auger drive belt (D, Figure 29) from the impeller pulley . Replace the auger drive belt with an original factory replacement belt available from an authorized service center.

14. Install the new auger drive belt (D) onto the impeller pulley.

NOTE: To assemble the auger housing to the frame, have someone hold the auger clutch lever in the ENGAGED position. This will move the idler arm and pulley enough to allow the auger drive pulley to move back into position.

15. Assemble the auger housing (C, Figure 34) to the frame with the four upper taptite screws (A) that were removed in step 12. Tighten the two lower taptite screws (B). Tighten all taptite screws to 40-50 lb-in (4,5-5,6 Nm).
16. Attach chute and offset tube previously removed (Figure 32 and 33. Tighten all KEPS nuts to 11 lb-ft (15 Nm).
17. Slide spout rotator rod (B, Figure 31) into worm gear, and secure with hair pin (A).
18. Install rotator cover (A) and secure with 5/16-18 flange lock nut (B). Tighten nut to 11 lb-ft (15 Nm).
19. Install the auger drive belt (D, Figure 29) onto the impeller pulley (H).
20. Slip the auger drive belt (D) under the idler pulley (K).
21. Adjust the auger drive belt. See "Belt Adjustment: Auger Drive Belt" in the Service section.
22. Adjust the belt guide. See "Belt Guide Adjustment" in the Service section.
23. Install the belt cover (A, Figure 24). Tighten 1/4-20 screws (B) to 25-35 lb-in (2,8-3,9 Nm).

Note: Caution must be taken when tightening the screws that secure the belt cover. Over tightening the screws will deform the plastic.

24. Check the adjustment of the cables. See "Adjustments - Auger Drive Adjustment and Traction Drive Cable Adjustment" in the Adjustment section.
25. Install the bottom panel (B, Figure 28). Tighten 1/4-20 screws to 25-35 lb-in (2,8-3,9 Nm).
26 Connect the spark plug wire.

Traction Drive Belt

If the snow thrower will not move forward, check the traction drive belt for wear or damage. If the traction drive belt is worn or damaged, replace the belt as follows.

1. Disconnect the spark plug wire.
2. Remove the auger drive belt. See "Belt Replacement" in the Service section.
3. Remove the traction drive spring (E, Figure 29).
4. Remove the e-ring (J, Figure 29) from one end of the swing plate axle rod (I).
5. Remove the swing plate axle rod (I) to allow the swing plate (A, Figure 35) to pivot forward.
6. Remove the old traction drive belt (A) from the traction drive pulley (G) and from the traction drive pulley (F). Replace the traction drive belt (A) with an original factory replacement belt available from an authorized Dealer.
7. Install the new traction drive belt (A) onto the traction drive pulley (G) and onto traction drive pulley (F).
8. Make sure the traction drive idler pulley (L) is properly aligned with the traction drive belt (A).
9. Install the swing plate axle rod (I) and secure with the e-ring (J) removed earlier.
10. The bottom of the swing plate (A, Figure 35) must be positioned between the alignment tabs (B). Make sure the swing plate is properly secured.

NOTE: If the drive will not engage after the traction drive belt has been replaced, then check to make sure that the swing plate is positioned between the alignment tabs.

11. Attach the traction drive spring (E).
12. Install and adjust the auger drive belt. See Belt Replacement in this section of the manual.
13. Adjust the belt guide. See Belt Guide Adjustment in this section of the manual.
14. Install the bottom panel (B, Figure 28). Tighten 1/4-20 screws to 25-35 lb-in (2,8-3,9 Nm).
15. Install the belt cover (A, Figure 24). Tighten 1/4-20 screws (B) to 25-35 lb-in (2,8-3,9 Nm).

Note: Caution must be taken when tightening the screws that secure the belt cover. Over tightening the screws will deform the plastic.

16. Check the adjustment of the cables. See Adjustments in this section of the manual.
17. Connect the spark plug wire.

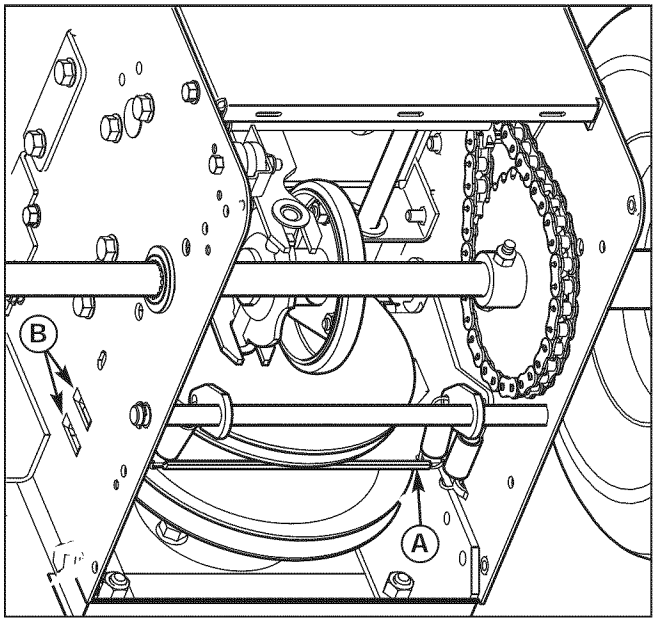


Figure 35. Traction Belt Change
A. Swing Plate
B. Alignment Tabs

NOTES

Specifications

NOTE: Specifications are correct at time of printing and are subject to change without notice.

** Power Ratings*

The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Torque values are derived at 3060 RPM; horsepower values are derived at 3600 RPM. Actual gross engine power will be lower and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given both the wide array of products on which engines are placed and the variety of environmental issues applicable to operating the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual "on-site" or net power). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.

ENGINE:

Briggs & Stratton

Make	Briggs & Stratton
Model	Snow Max
Gross Torque	9 @ 3060 rpm
Displacement	12.5 Cu. in (205 cc)
Oil Capacity	18-20 oz. (0,54-0,59 L)

CHASSIS:

Wheels	
	Tire Size: 13 x 5
	Inflation Pressure: 20 psi (1,37 bar)
Spout Rotation	200 Degrees
Impeller	10" (30cm) 4 Blade Ribbon Flighted Steel
Auger Opening Height	24" (61 cm)
Drive System	Friction Disc, 6 Forward Speeds, 2 Reverse

DIMENSIONS

Effective Clearing Width	**24" (61cm)**
Length	**54" (137cm)**
Height	**42.5" (108cm)**
Weight	**SMI - 180 lbs. (81.64 kg)** **SNP - 177 lbs. (80.28 kg)**

REPLACEMENT PARTS

Replacement parts are available from your authorized dealer. Always use genuine Simplicity / Snapper Service Parts.

MAINTENANCE ITEMS

Many convenient and helpful service and maintenance items are available from you authorized dealer. Some of these items include:

Engine Oil
Touch-Up Paint
Grease Gun Kit
8 oz. Grease Tube
Tire Sealant
Degrimer/Degreaser
Gas Stabilizer

TECHNICAL MANUALS

Additional copies of this manual are available, as well as fully illustrated parts lists. These manuals show all of the product's components in exploded views (3D illustrations which show the relationship of parts and how they go together) as well as part numbers and quantities used. Important assembly notes and torque values are also included.

For applicable manuals currently available for your model, contact our Customer Publications Department at 1-877-249-6647, and have the information listed in the box below available when phoning in your request. Technical manuals can be downloaded from:

www.simplicitymfg.com

www.snapper.com

Model: _____

Mfg. No.: _____

Your Name: _____

Address: _____

City, State, Zip: _____

Visa/Mastercard No.: _____

Card Expiration Date: _____

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